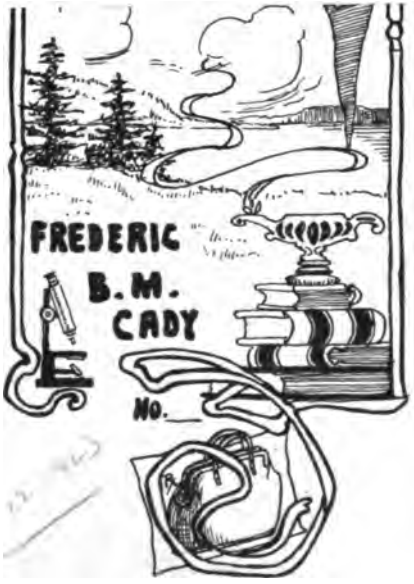

GERIATRICS

GERIATRICS

A TREATISE ON SENILE CONDITIONS, DISEASES OF ADVANCED LIFE, AND CARE OF THE AGED

BY

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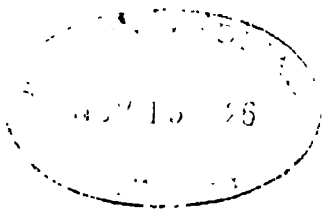

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TO

I. L. NASCHER, M.D.

THE FATHER OF GERIATRICS

PREFACE

In 1860, when Doctor Abraham Jacobi began his first systematic course in pediatrics, very little interest was taken by the medical profession in this specialty. It was a difficult matter to convince physicians that the ailments of children required special attention and treatment and Doctor Jacobi met many discouragements before he succeeded in firmly establishing pediatrics as a special branch of medicine. As public interest in child conservation increased, medical interest in pediatrics increased, and today this is one of the most important branches of medical science.

For many years French and German physicians understood that the other extreme of life required special study and care; that the methods and measures successful in diseases in earlier life were often detrimental in the same diseases in old age; and that the natural tendency of pathologic processes was to spread, become more active, cause further disorganization, and lead to death. It seems to be as difficult to impress these truths upon American physicians today as it was difficult, half a century ago, to make physicians realize the importance and truth of pediatrics. From the time of Hippocrates, whose works contain many references to senile conditions, to this day, philosophers, scientists, and physicians have studied and written about the aged, but the first scientific treatise on diseases of old age, Floyer's *Medi-*

cina Gerocomica, appeared in 1724. Our present knowledge of senile diseases is based upon Canstatt's *Krankheiten des Hoherem Alters und Ihre Heilung,* which appeared in 1839. Since then, a number of German and French textbooks on this subject have appeared, but aside from the English translation of Charcot's lectures, given in the late sixties, and Seidel's Monograph on *Diseases of Old Age,* in Woods' *Monographs* of 1890, no important American book appeared until Nascher's textbook *Geriatrics, The Diseases of Old Age, and Their Treatment* made its appearance in 1914. It is a singular fact, showing the universality of medicine, that Doctor Abraham Jacobi, who, fifty years before established pediatrics as a special branch of medicine, wrote the introduction to Doctor Nascher's work, the first complete textbook on the subject in the English language. Like Brettoneau, his pupil Trosseau, and Trousseau's pupil, Dieulafoy who succeeded each other in developing medical science during the greater part of the nineteenth century, the writer has had the good fortune to continue the work of Doctors John A. Wilcox and Horace Wilcox, who for more than half a century have devoted their lives to the advancement of medical science, and who had a wide experience in the care of aged patients.

The plan followed in this work is to make a clinical presentation of cases, not a textbook presentation of diseases. It is really a series of monographs, following the style of French writers, who report cases and then discuss them. In this way, the cut-and-dried textbook style is avoided, the personal views of the writer are presented, the discussion is in great part limited to the writer's experience; therefore, a mass of statistics is omitted.

One of the most frequent questions asked about geriatrics is, "At what age does the study begin?" At a meeting of the New York Geriatric Society, the surgical aspect of the aged was discussed, and the surgeons present limited their remarks to cases over seventy years of age. This is the general impression, but it is erroneous. The subject may apply to persons of thirty: indeed, I had a patient thirty years of age who presented senile changes including arteriosclerosis and calcareous degeneration of the arteries without apparent cause. Had there been syphilis, plumbism, or other of the pathologic causes for the condition, it would not have come under this head. Being apparently a case of precocious senility, it falls within the scope of geriatrics. Many persons at, or just past forty-five, present senile changes which should not appear until seventy or later.

Geriatrics includes, not only the treatment of senile diseases, but also the care of the aged, the causes of ageing, and measures for prolonging life. Many of the arteriosclerotic and other senile changes begin about the age of forty-five, and proper attention at this time would prevent their too rapid development. The study of geriatrics should then include persons about fifty: about the time when the senile changes first become manifest.

With increasing interest in this subject it is not too much to expect special geriatric hospitals, laboratories, and specialists, who will devote themselves exclusively to the care of the aged.

Many of the articles in this work have appeared in the *Medical Review of Reviews, Urological and Cutaneous Review, Medical World,* and elsewhere. I am indebted to the X-ray Department of the Boston Dispensary, and to Major Arial W. George, Medical Reserve Corps,

United States Army, for the roentgenograms in this work. I am grateful to Doctor I. L. Nascher for his assistance in preparing the manuscript and to Doctor Horace Wilcox for valuable information on the subject given to me during the many years that I have been associated with him.

M. W. T.

New York City.

INTRODUCTION

By I. L. Nascher, M.D., New York

Three incidents in my career led to the closer study of the senile organism and the introduction of geriatrics as a special branch of medicine. During my student days back in the early eighties, an instructor took a number of students to the almshouse to see cases. An old woman hobbled up to the instructor with some trivial complaint. He afterwards told us that she was suffering from "old age." "And what could be done for her?" "Nothing." Suffering from old age and nothing could be done to relieve her suffering! Is old age, then, a disease from which those who had reached advanced life were doomed to suffer? This incident, as vivid today as it was nearly thirty-five years ago, laid the foundation for the branch of medicine to which I gave the name "Geriatrics."

In 1890 Seidel's monograph *Diseases of Old Age* appeared. It contained the keynote of the subject in the following paragraphs:

"Mistakes are made daily in the treatment of the aged and the normal mortality of advanced life is considerably increased as a result of the hitherto neglected study of the peculiarities of the senile organism." This monograph epitomized what was then known of the diseases occurring most frequently in advanced life, but it was altogether too short to serve as a handbook. It was a landmark, not a guide post. At this time there was no modern work in English on the subject, the most recent American book on Diseases of Old Age being Charcot's

and Loomis' Work which appeared in 1881. This was an English translation of Charcot's lectures on gout and rheumatism, given in Paris in the late sixties, to which Doctor A. L. Loomis added a few lectures. Fothergill's *Diseases of Sedentary and Advanced Life*, 1885, was written for the layman as well as the physician, and like all such works it omitted the technical matter essential for scientific study. Seidel's monograph gave hints and suggestions which could be used as themes for investigation and development but there was still lacking something upon which the superstructure of a new branch of medicine could be built. This was furnished fifteen years later in an apparently trivial remark made by the physician of a Home for the Aged near Vienna.

In reply to my question to what he attributed the low death rate in his institution he said, "We deal with the aged inmates as aged persons just as the pediatrist deals with children." This remark amplified, gave me the basic principles of geriatrics. "Senility is a physiologic entity like childhood; not a pathologic state of maturity." "Diseases in senility are pathologic conditions in a normally degenerating body; not diseases such as occur in maturity complicated by degenerations." "The object of treatment of disease in senility is to restore the diseased organ or tissue to the state normal in senility; not to the state normal in maturity."

Upon these cardinal principles was erected the new branch of medicine. The introduction of a new specialty in the already overspecialized science of medicine was generally discouraged but a few physicians realized that there was a void in medicine, that geriatrics was a legitimate and necessary branch. Among the first of these physicians to recognize this was Malford W. Thewlis, the author of this work. Doctor Thewlis not only encouraged me in my efforts to arouse medical interest in

the aged and their diseases, but became a close observer of senile conditions, did research work, published a number of valuable articles and became associate editor of the Department of Geriatrics in the *Medical Review of Reviews*. Doctor Thewlis is today one of the few recognized specialists in geriatrics in this country. Spurred by scientific interest as well as by a deep sympathy for the aged, he has given to the medical profession in this work the result of many years of study in this neglected branch of medicine.

INTRODUCTION

By A. Jacobi, M.D., New York

I have been called upon to introduce another book on the diseases of advancing and advanced years. The author does not mean to start a new specialty when enlightening us about the physiology and pathology of age, but, conversely, thinks that our American literature has been rather slow in directing the attention of our physicians to the ailments of the old. Some of us may have been of the opinion that we have been quite too generous in giving consideration to real or alleged specialties, for instance, the diseases of infants and children; but there is no doubt that certain parts of the maladies of advanced age have not been taught or studied to their full merit.

Now with "infancy," "childhood," or "puberty" we connect a certain number of years and anatomic and physiologic alterations which are readily recognized, but in later life there is no change known by a certain number of years or changes recognizable as an epoch. Changes of bones of the same character may occur about any age without indicating a certain period of life. A "malum coxæ senile," may not mean exactly the seventh or fifth or fourth decade. Atheromatosis and sclerosis do not mean a certain time of life which may be counted by years or named "youth" or "age" or "maturity." "Age" may reach a man in early years or in retarded periods. That is why from time to time more books or even better books may be written or studied on "age" or "old age"; these titles may mean different objects or conditions. Changes of the heart muscle or the anatomy of the blood vessels may be the same at twenty-five which we report at fifty or eighty. Respiratory varia-

tions, chronic bronchitis, or emphysema will cause the same manifestations and indicate the same therapy at twenty as at seventy-five without the diagnosis of "old age"; cataract or prostatic disease, cystitis or neoplasm need not mean a definite advanced period of life. A "sepsis," which we diagnosticate so readily, or "neuritis," which we attribute to the old so often, must not be limited to individual epochs. Even a diverticulum does not wait for individual local changes or strictures; for at any age it may be met with and accompanied by dangerous symptoms.

Maybe the student will do well to be prepared for certain changes in the course of a malady when his patient is aged; collapse is frequent though a fever is not marked. At that period in a feverish affection the temperature may be low. The practitioner must not forget that the slovenly way of taking the temperature of the body in the axilla or the mouth in a pneumonia will never do when the rectum (or occasionally the vagina) ought to be the only reliable access. Particularly is this important when the patient is a male. Infections usually turn readily into paralysis. Cerebral affections of the aged are liable to be fatal. Local symptoms about the lungs are sometimes quite few with little pain, little dullness and insufficient auscultatory changes.

In the practice among the old, or the prematurely old, some symptoms should always be looked for, though they are rare. Such are chills, or pain in gout, or polyuria in diabetes. Some must be feared though they are rare, for instance, affections of the tonsils, or diphtheria, or maladies connected with the spleen. Some must be apprehended because they are frequent and fatal; such as bronchitis which is apt to relapse and be complicated with pneumonia either sclerotic or catarrhal; renal disease which is a frequent cause of death; influenza which

kills many; parenchymatous tumors or those complicated with concretions, or with pus, or with erysipelas.

Tuberculosis is not at all rare in the aged. Tuberculous ulceration of the intestines is frequent. Tuberculous pericarditis, meningitis, osteitis, and arthritis are not infrequent. Pulmonary tuberculosis has more of a fibrous than purulent character; the chronic form may last many years, while the general condition of the patient is fair. The temperature is often quite low and should be taken in the rectum. Hemorrhages are scarce, particularly in kidneys and the prostate.

Cancer is not very frequent in the aged; more so about the middle years. It is liable to destroy life before it reaches advanced age; that is why it can not be called a disease of the old. The question of the frequency of carcinoma is doubtful so long as its diagnosis may be questionable. Indeed we make more positive diagnoses of cancer than formerly in intestines, gall bladder, thyroid and prostate, and discriminate more correctly between sarcoma and carcinoma. Altogether the influence of trauma—for instance, phimosis, calculus, fistula, flexure, or lupus—on the early development of cancer is not great.

Modern therapy may also have its influence on statistical statements. Roentgenotherapy has cured some carcinomata, and caused many. Radiotherapy has cured skin cancer in many instances; and the treatment of carcinoma with methyl thionin hydrochloride has proved successful at least in retarding the development of cancer in hundreds of my cases (Jour. Am. Med. Assn., 1906).

My readers will feel sure that I am much interested in the subjects which form the studies of the author. My fragmentary remarks were to introduce a few of the schemes he means to teach us. I know he will succeed.

A Jacobi

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GERIATRICS

CHAPTER I

GERIATRICS

Geriatrics is the branch of medicine dealing with old age. That the aged require special care and treatment was recognized by Hippocrates, the father of medicine, twenty-three centuries ago. That they require special study has only recently been recognized and even today a large proportion of the medical profession ignores the study of the senile organism.

Geriatrics is based upon three fundamental principles: (1) that senility is a physiologic entity like childhood and not a pathologic state of maturity; (2) that disease in senility is a pathologic condition in a normally degenerating organ or tissue and not a disease such as we find in maturity, complicated by degenerations; (3) that the object of treatment in senility should be to restore the diseased organ or tissue to the state normal to senility and not a restoration to the condition normal in maturity. The correct interpretation of senile pathology (principle 2) is impossible without a knowledge of the normal senile anatomic and physiologic changes (principle 1), and the proper treatment and care of the aged (principle 3) is impossible without a knowledge of senile pathology.

Anatomic changes, called senile degenerations, occur in every organ and tissue of the body. The essential change is a waste of tissue which is either not repaired

at all or is replaced by tissue of a different character. In every case where the waste is repaired by other tissue the new tissue is of a lower order, requiring less blood supply and incapable of doing the work of the wasted tissue. Wasted brain and nervous tissue is not regenerated, but some change occurs in the character of this tissue in old age. The senile brain is shrunken, denser, and contains more fluid and less fat. Nerve fibers are thinner and the nerve cells are atrophied. In some cases the waste of muscles is replaced by fat, in some cases by fibrous tissues and in others the waste is not repaired. Muscles actively employed usually waste, but the most active of all muscles, the myocardium, generally undergoes fibrosis. In brown atrophy, the cardiac muscle undergoes the same change that occurs in other solid organs in old age, but this form of senile cardiac degeneration is rare. Inactive muscles usually undergo fatty degeneration.

In bone the organic matter wastes, leaving an excess of mineral matter and causing the bone to become more brittle. The waste of the organic matter in the heads of long bones produces a spongy condition, or osteoporosis. Bone marrow becomes harder, denser, and whiter and contains more fat than in young persons. Cartilage either wastes through insufficient repair, becomes fibrillated and wastes through attrition, or becomes fibrous or osseous. Ligaments and tendons waste, contract and become stiff and hard. The synovial sacs become dry and the sac-covering becomes dry and thick. These changes in the structure of the joint cause a stiffening with diminished motility—a condition designated as "arthrosclerosis."

The skin becomes dry and thin, it is darker where it has been much exposed to sunlight and owing to the waste of connective tissue it becomes loose, and falls into folds. These folds are especially marked where

Fig. 1. Roentgenogram of wrist of a woman, aged 65, showing atrophy of the cartilages, making the bones very close to each other. This plate also shows rarefaction of the ends of the metacarpal bones.

there has been a waste of fat, as on the forehead, neck, etc. The hair becomes gray and thin, with an occasional excessive growth in unusual places as on the eyebrows, in the ears and nose of men, and on the upper lip and chin of women. The changes in the hollow organs and tubes consist of atrophy of the muscular fibers with consequent dilatation of the organ or tube, and where glands are imbedded in the walls as in the stomach and intestines, the glands atrophy. In solid organs as kidneys, liver, pancreas and spleen the tissue cells atrophy and there is a proliferation of connective tissue fibers constricting the organ, making it smaller and denser. The spleen is thus often diminished to nearly half its usual size. The smaller glands atrophy and their secretions are diminished. In a few instances organs and tissues do not follow the usual course. The prostate gland is usually enlarged through excessive proliferation of fibrous connective tissue. The ureters undergo fibrosis and become stiff and hard and the blood vessels become harder through waste of muscular fibers and their replacement by fibrous tissue. The heart is usually hypertrophied, but this is a compensatory and not a degenerative condition. The sudoriparous glands atrophy, but in some locations as in the axilla, in the groin, etc., there is an excessive excretion of perspiration which has a fetid odor. In the lungs, the constant inhalation of dust produces a pneumonokoniosis and the waste of tissue causes a thinning and later complete waste of the walls of the alveoli, air cells coalesce and emphysema is produced. The blood changes so far recognized are, diminished amount, increased viscosity and density and increased hemoglobin content.

As a result of the anatomic changes the functions of the organs and tissues are altered, but the functional changes do not always correspond to the anatomic changes owing to the hardening of the blood vessels

and their lessened elasticity. The amount of blood carried to all parts of the organism, especially to the parts supplied by terminal vessels, is lessened and the organs and tissues supplied by these terminal vessels are insufficiently nourished. Neither the character nor the extent of the physiologic changes gives any indication of the extent of the histologic changes in the functionating organs. Very little of the spleen substance is left in advanced life and the character of the bone marrow is greatly altered, yet there is apparently no change in the number or character of leucocytes. The composition of the urine shows little alteration in the aged though the senile kidney is extensively changed. On the other hand, the physical debility is usually far greater than can be explained by the wasted muscles or the anatomic changes that can be recognized in the nerves or nerve terminals.

The pronounced physiologic functional changes consist of lessened activity, altered activity, and loss of the harmonious interrelation between associated functions. The circulation is maintained with difficulty as the vessels have lost their elasticity and the compensatory increased activity of the heart is expended in the larger vessels and is lost in the smaller peripheral arteries. Owing to the atrophy of the muscular fibers of the veins and the consequent dilatation and loss of tonicity of the veins, the return circulation is impaired and the entire circulation is weakened. At the same time the tissues involved in the nervous system degenerate and nerve control is impaired. As a result of the nervous and circulatory changes, organs and tissues are insufficiently nourished, they degenerate and their functions are weakened and in some cases altered while the harmonious interaction of functions is impaired. The respiratory capacity is diminished, the amount of air inhaled is insufficient to completely oxygenate the blood and the carrying capacity of blood, of nutrition to the organs and tissues, and waste from the organs and tissues, is lessened.

Fig. 2. Roentgenogram of skull of a woman, aged 72, showing narrowing and atrophy of the jaw and a pointing and prominence of the mandible which is accentuated by atrophy of the ramus.

Fig. 3. Roentgenogram of ankle of a man, aged 70, showing rarefaction of the bones, atrophy of the cartilages making the space between the tarsal bones much less than in younger individuals. There is also a penciling of the outlines and coarse trabeculæ of the bones, a characteristic of old age.

The impaired blood is now incapable of completely repairing the waste of lung tissue and consequently lung degeneration is hastened and this still further impairs the oxygenating power of the lungs. In like manner vicious circles are created throughout the organism. The muscular fibers of the rectum atrophy, permitting a dilatation of the lower bowel. This permits a larger amount of fecal matter to accumulate in the rectum, and owing to the atony caused by the waste of muscular fibers, a larger amount accumulates than the normal bowel can hold. The bowel is still further dilated, the weakened muscular fibers are still further stretched and further waste and atony ensues with greater distention. Prolonged retention of feces with consequent decomposition and absorption of these toxins produce intestinal toxemia with its train of symptoms and interwoven vicious circles.

Organs and tissues being in a process of degeneration and their functions impaired in the aged, when they become diseased, the pathologic and the functional changes are different from the changes that occur in the same disease in earlier life. Some diseases are peculiar to the senile organism, others are so greatly modified that they are hardly recognizable in the altered symptoms and signs. In Nascher's classification of the diseases of advanced life the diseases are divided into five groups, primary senile diseases, secondary senile diseases, preferential diseases of old age, modified diseases of old age and diseases uninfluenced by old age or rare in old age. In the first group are defects in the normal senile processes or functions. In the second group are diseases resulting from the senile changes. Thus, cerebral arteriosclerosis belongs to the first group while rupture of the sclerosed cerebral vessels causing apoplexy belongs to the second group. The preferential diseases are those

which occur most frequently in advanced life but may occur earlier. Such diseases as paralysis agitans, diabetes, gout, arthritis deformans, cancer, etc., belong to this group. The fourth group contains most of the diseases which may occur at any time of life.

Owing to the altered anatomic structures and relations and altered functions in old age, pathologic processes affect these structures, relations and functions differently and the diseases are modified in character and in their symptoms and signs. In the last group are diseases such as the infectious diseases of early life and diseases which do not differ materially at any period of life. The treatment of disease in the aged must be based upon the third principle; restoration to the norm of senility, not to the norm of maturity. It is folly to attempt to convert diseased degenerating tissue of advanced life to the state normal in earlier life. Yet we frequently find physicians attempting to cure senile arteriosclerosis and proclaim a cure when they have succeeded in reducing the blood pressure temporarily. Through drugs and other means they will temporarily stimulate functions and congratulate themselves that they have caused rejuvenation when in fact the temporary stimulation will be followed by a reaction in which degeneration proceeds more rapidly. Drugs and other therapeutic measures do not act upon the degenerated tissues in the same manner as they do upon the healthy or diseased tissues of maturity. Doses are reduced without rule or system when most drugs must be given in increased doses. Drugs are given which are not assimilated or which produce in the senile organism more pronounced secondary effects than in earlier life. Failure to recognize these factors in the treatment of disease in senility is another cause for the frequent failure to cure senile patients.

CHAPTER II

NEGLECT OF THE AGED

That the aged are neglected is very evident. There are hundred of books, journals, and societies devoted to the welfare of the child and the number is increasing year by year. Aside from the small organizations interested in particular homes for the aged and one small medical society interested in senile diseases, there is no general body interested in the welfare of the aged. There is not a journal in the world devoted to the aged, while the few books dealing with the conservation of the aged are either medical works concerned with senile diseases or scientific works too technical for popular use.

The layman understands that the food suitable for the young, active individual is not suitable for the aged person, yet he looks in vain through the standard works on feeding and food for dietetic rules or formulæ for the aged. Neither can the physician who is not familiar with the changes in the digestive organs and in their functions, formulate a suitable dietary. The same applies to the clothing, sleep, exercise, recreations and to every other factor in their lives.

A large proportion of the medical profession is still ignorant of the peculiarities of the senile organism and physicians still treat aged persons as they treat younger ones, perhaps diminishing doses of drugs, without system or reason. When the patient dies under such treatment the physician eases his conscience and satisfies the family by ascribing death to "old age." But the conscientious physician who is imbued with the scientific spirit is not satisfied with this diagnosis. Old age is not a disease, and

ordinarily it is not a cause of death. Death from old age is conceivable. It is possible that there will be a gradual degeneration of all the organs and tissues and their functions become more and more impaired, that cerebral activity and nervous and muscular irritability be gradually diminished to the point of complete extinction. This is, however, exceedingly rare. It is far rarer than vital statistics indicate since many deaths ascribed to old age are due to disease which the physician did not recognize, or, finding symptoms and signs which he could not interpret, he resorted to the diagnostic placebo, "old age."

We can readily account for the public neglect of the aged. Human sympathy is universal in its scope, but not in its application. Instinctively or subconsciously, economic values, social relations, the esthetic sense and other factors influence the directions in which sympathy is applied. The aged become economically worthless and must remain so, while the child has a prospective and ever-increasing economic value. Optimistic philosophers of all ages from Cicero to Jean Finot describe old age as being beautiful, but no philosopher has ever declared that the aged themselves were beautiful. From the purely esthetic standpoint the aged are disagreeable, often repulsive, repelling those whose sympathy can be aroused only by the sight of helplessness or sound of distress. This repulsiveness appears also in other directions, in disagreeable odors, offensive actions, in peevishness, selfishness, wilfulness, suspicion, etc. One or another of these repelling forces exists in almost every case and overcomes sympathy and interest. We find consequently that there is the universal tendency to shift the responsibility and the care of the aged upon others, usually upon the community at large. Individuals usually take an interest in their own, though this interest is often more dutiful than filial and here the in-

terest in the children is far greater than in the grandparents. There is lacking altogether the sympathy for the aged that is essential for their welfare.

Medical neglect of the aged is as general as is the public neglect. Here and there some physician thoroughly imbued with the principles of the medical profession, sympathy and science, has made a study of the aged in health and in disease, has recognized the great difference between maturity and senility and has devoted himself to the care of the aged. But the great mass of the medical profession is still indifferent to their welfare. This is due partly to the causes which lead to the public neglect of the aged and partly to other factors. There is nothing spectacular in geriatrics, it is not as remunerative a specialty as other branches of medicine, and the physician's endeavors must end in ultimate failure. Medical knowledge has increased to such an extent during the last half century that subdivisions and specialization have become necessary and the physician of today must devote himself to a specialty if he wants to keep up with the spirit of the times. And it is but natural that the physician will select a specialty which is either spectacular, remunerative or promising of success. There is another reason that geriatrics is still unpopular. So little has been done in this field and so little has been written about it that the physician taking it up will be obliged to do considerable original observation and research work. There are few physicians who are willing to give their time and mental efforts in so unpromising a field when other fields giving greater assurance of success are open to them and yet there are problems connected with geriatrics which, if solved, would make this branch perhaps as spectacular, as remunerative and as successful in immediate results as any other branch of medicine. May there not be causes of ageing which can be controlled or minimized thereby prolonging life? May

there not be some means for stimulating the mental and physical organism thereby causing a rejuvenation, without the reaction which hastens degeneration? Can we not lessen and relieve the many little aches and pains which the aged bear with resignation since they have been taught that these are inevitable results of advanced life?

Here are a few problems well worth the physician's efforts to solve, problems which if solved would revolutionize the medical care of the aged, as the solution of the etiologic problem of tuberculosis revolutionized the whole science of medicine. Within the memory of old physicians pediatrics was looked upon as a medical fad. Today it is one of the most important branches of medicine and the close study of this branch has resulted in the restoration to health and the saving of life of thousands of children. The study of geriatrics gives the same promise in regard to the aged. It requires only the thoughtful consideration of the underlying principles of geriatrics to convince physicians that it is worth while and that in our present attitude toward the aged and their ailments we are deliberately neglecting our duty toward them.

CHAPTER III

THE VALUE OF OLD AGE

To grow old gracefully is an art which is difficult to acquire, especially in the present day when we are apt to say that the old should make room for the young. It is very common to look upon a man of sixty as too old to be of use in the world, and the present conditions of society really do not offer them encouragements to master their old age.

A careful analysis, however, will show us that some of the greatest works in art, music, poetry, etc., have been accomplished by men past sixty,—even past eighty the list is a long one—and without these master minds, the world today would not be as rich in accomplishments as it is.

To "stay in the harness" in ripe old age has been the motto of many of these aged persons. To keep at work in an interesting occupation is in reality the keynote of obtaining the best there is in old age.

A French philosopher said that a man should keep at his work as though immortal, even if he should know that his death would come the next day. Goethe said, "When a man is old he must do more than when he is young." Emerson said, "The high prize of life, the crowning fortune of a man is to be born with a bias to some pursuit, which finds him in employment and happiness."

It seems, then, that the accomplishments of these old persons rest upon their ability to "stay in the harness." Many an old man is living today who owes his life to occupation. Old age is sweet in its best, notwithstand-

ing the horrible examples we observe in everyday life. Many of these old men today are our resources of knowledge; when a young lawyer needs advice he goes to an older lawyer; a young physician consults an older one; the old and young work side by side and each profits from the presence of the other. Advice and activity, knowledge and energy, age and youth, mix well and make the world what it is. It is folly to say that the old should step to one side and give the young men a chance.

Some men seem to gain in energy as they grow older. Dandolo, when past ninety and utterly blind, stormed Constantinople. Titian was painting his finest pictures before he died in his hundredth year. Brougham was a strong debater at eighty, and Lyndhurst, when over ninety, spoke in the House of Lords.

Goethe worked "in the harness" until he was past eighty years and his intellect remained intact and he retained his great energy. Some of his best poems were written when he had passed his seventy-fifth birthday.

Herbert Spencer died "in the harness" at the age of eighty-three. Several years before his death he had a nervous breakdown and practically became an invalid. He worked hard and became master of his affliction. At times he was able to write but a few paragraphs in a day, but little by little his great works were written. He was a great sufferer for over forty years yet he produced some of his best works during this time.

Sir Joseph Hooker of England, the great botanist, did a great deal of work after he became an octogenarian. Macaulay was forty-eight when he issued the first and second volumes of his *History of England,* but the third and fourth volumes did not appear until he was fifty-five years of age.

Darwin did not establish his reputation until he had passed fifty. He wrote *Descent of Man* at the age of sixty-two. Humboldt's greatest works were produced

after three-score years, and one of his greatest works was not completed until he was eighty-nine years old.

Carlyle refers to the slow development of a rich nature. He did not begin to publish any of his great works until he was forty years old. The first two volumes of Frederick the Great appeared when he was sixty-three; two more when sixty-seven and the last two when he was sixty-nine.

In many instances it seems that old age produces changes which increase a man's power of energy. Oliver Wendell Holmes in one of his admirable breakfast-table talks said that he found he could learn twice as easily as in his earlier days, the reason being that he had increased power of concentration.

Oliver Wendell Holmes did not become known over the world until late in his life. *The Iron Gate* which he wrote for an honor-dinner for his seventieth birthday has been called the finest creation of his genius since the publication of *The Chambered Nautilus* which was written twenty years before.

Longfellow at forty-eight wrote the *Song of Hiawatha.* After that age his writings were prolific. At sixty-eight years of age he wrote *Morituri Salutamus* which was written for the fiftieth anniversary of his graduation from Bowdoin College.

Washington Irving wrote the life of Oliver Goldsmith at sixty-six years of age. His *Life of Washington* in five volumes was completed only during the year of his death at seventy-six years of age.

Doctor S. Weir Mitchell, like Oliver Wendell Holmes, was an active medical man who spent his spare moments writing. Doctor Mitchell at seventy-five was still practicing medicine and his literary labors were still active. His best literary works were accomplished after he was fifty years of age. His *Constance Trescot,* regarded by

many as his best work, was written when he was seventy-five years of age.

Justin S. Morrill, of Vermont, at eighty-eight years of age, an active member of the United States Senate, rose in his seat in the Senate and with his old-time energy led the debate on the annexation of Hawaii. It was said of him that he never missed a roll call in the Senate, and, it is said, made fewer mistakes in public life than any other man.

Thomas H. Benton, Senator from Missouri when seventy-two years old was defeated for his sixth term. He started a new life and began a political review of all parties from the time of John Quincy Adams to Franklin Pierce. Theodore Roosevelt, in his biography of Benton, says: "Benton grew in character to the very last. He made better speeches and was better able to face new problems when past three-score and ten than in his early youth or middle age."

Mr. Beecher says that he does not know of anything that is made sour by frost except man. "They sometimes are. October, the ripest month of the year, and the richest in colors, is a type of what old age should be."

To grow old cheerfully is a great art. To be able to cast one's trouble aside and sleep without worry is an asset worth possessing. Mr. Gladstone locked every affair of state and every other care outside of his bedroom door. To his sound sleep he attributed his longevity.

James Russell Lowell was once passing a great building in London which bore the inscription "Home for Incurable Children," and with a twinkle of his eye said to a friend, "They'll take me there some day."

The greatest men of the world have the heart of a child and when they leave all of childhood behind them they no longer see the visions or dreams that make life so pleasant to us.

It has been often said that Oliver Wendell Holmes never had an unhappy mood. He trained himself to grow old gracefully and was extremely optimistic. His whole object in life was to make the world better.

Edward Everett Hale published his *Memories* when he was approaching eighty years of age. At eighty-two he was elected Chaplain to the United States Senate. Like Emerson, his home sheltered many of the world's literary men who received great stimulation and pleasure in his company.

The world is indeed richer for the accomplishments of men past the three-score mark in life. It is the common thought that a man who has reached the three-score age has passed his field of usefulness. Little attention is commonly given to the aged and for this reason men do not receive the stimulus to accomplish great things that they would under proper encouragement.

To give the matter casual thought we would not ordinarily realize that some of our best works of art, poetry, and the sciences were produced by octogenarians.

In the later days our history was in part shaped by the newspapers which had at their heads men ripe in age and experience. Much could be said for Horace Greeley of the *Tribune,* Charles A. Dana of the *Sun,* Samuel Bowles of the *Springfield Republican,* and William Cullen Bryant of the *Evening Post.* These editors did a great deal of their best work in their advancing years and left a standard for newspapers that makes our press substantial today.

Doctor James Scott of Maine at sixty met reverses in business and decided to enter medical college. Upon his graduation, with highest honors, he practiced for more than twelve years and was very successful.

Doctor Alonzo Garcelon, at one time governor of Maine, continued active practice of medicine past the age of ninety.

Gladstone was the best type of English gentleman and the great man of the nation. He became famous after the age of sixty and was elected Prime Minister four times, still retaining the office at the age of eighty-two.

There was apparently no end to his capacity for work, and it was said of him that "no pressure of work made him fussy or fidgety, nor could any one remember to have seen him in a hurry."

In contrast to Disraeli, however, Gladstone did not possess a fund of satire, irony or humor. Nevertheless, he lived a simple life and was said to have, like Horace Fletcher, masticated his food many times before swallowing. He walked a great deal and even after his seventieth year he continued this habit.

In his eighty-ninth year, before his death, he was as fervent as when thirty and possessed a keen mentality. It was said that he was "the most colossal character on the globe."

Emerson said that men old in years and intellect composed the greatest government. He tells of the blind Dandolo who became chief magistrate of Venice at eighty-four; stormed and captured Constantinople at ninety-four, and after the revolt was again victorious and elected at the age of ninety-six to the throne of the Eastern Empire, which he declined, and died doge at the age of ninety-seven.

King Christian of Denmark at eighty-six ruled his kingdom with a strong hand and was one of the greatest powers of Europe.

John Quincy Adams was past sixty-five when he became a famous statesman. At this age a great majority of men close their careers instead of beginning them.

Daniel Huntington, famous artist who made fine portraits of Lincoln, Grant, Agassiz, Bryant, etc., at the age of eighty-seven was still very active in his excellent work.

Admiral George Dewey was sixty-one when he won the great honors at Manila Bay.

John Hay was sixty-four before he became world-renown as a great diplomat.

William Cullen Bryant, the famous American poet and journalist, remained "in the harness" until his death at the age of eighty-nine. Because of his remarkable activity few realized his advanced age and his death was a great surprise to the world. In fact the world was shocked at the news. The author of *Thanatopsis* kept young to a remarkable degree, and it is well worth reading the following statement from him explaining his theory of growing young gracefully:

"I have reached a pretty advanced period of life—seventy-eight years and four months—without the usual infirmity of old age, and with my strength, activity, and bodily faculties generally in pretty good preservation. How far this is the effect of my way of life, adopted long ago, and steadily adhered to, is perhaps uncertain. I rise early—at this time of year about half-past five; in summer, half an hour, or even an hour, earlier. I immediately, with very little incumbrance of clothing, begin a series of exercises, for the most part designed to expand the chest, and at the same time call into action all the muscles and articulations of the body. These are performed with dumb-bells, the very lightest, covered with flannel; with a pole, a horizontal bar, and a light chair swung around my head.

"After a full hour, and sometimes more, passed in this manner, I bathe from head to foot. When at my place in the country, I sometimes shorten my exercise in the chamber, and going out, occupy myself for half an hour or more in some work that requires brisk exercise. After my bath, if breakfast be not ready, I sit down to my studies until I am called. My breakfast is a simple

one—hominy and milk, or in place of hominy, brown bread, or oatmeal, or wheaten grits, and in season, baked sweet apples. Tea or coffee I never touch at any time. At breakfast, I often take fruit, either in its natural state or freshly stewed. After breakfast I occupy myself for a while with my studies, and then, when in town, I walk down to the office of the *Evening Post* nearly three miles distant, and after about three hours, return, always walking, whatever be the weather or the state of the streets. In the country I am engaged in my literary tasks till a feeling of weariness drives me out into the open air, and go upon my farm or into the garden and prune the trees or perform some other work about them which they need, and then go back to my books.

"At the meal which is called tea, I take only a little bread and butter with fruit. In town where I dine later, I take but two meals a day. Fruit makes a considerable part of my diet. My drink is water.

"I never meddle with tobacco, except to quarrel with its use. That I may rise early, I, of course, go to bed early; in town as early as ten; in the country somewhat earlier. For many years I have avoided, in the evening, every kind of literary occupation which tasks the faculties, such as composition, even to the writing of letters, for the reason that it excites my nervous system and prevents sound sleep. I abominate all drugs and narcotics, and have always carefully avoided everything which spurs nature to exertions which it would not otherwise make. Even with my food, I do not take the usual condiments, such as pepper and the like."

Bryant did his best work after three-score and ten. He was a wonderful orator besides being a great author.

While delivering an oration at the unveiling of the statue of Giuseppe Mazzini, he was partially overcome by the heat and when leaving the gathering, fell on a stone and in a few days died of hemorrhage.

Famous women who have accomplished some of their best work in their old age would make a long list. Mrs. Russell Sage, born in 1828, had a great fitness and wisdom for her philanthropic work. Mrs. Doremus, the mother of Professor R. Ogden Doremus, at an advanced age, spent the evening of her life in charitable and philanthropic labors. Elizabeth Blackwell, M. D., born in 1821, with her sister Emily founded the Women's Medical College. Rev. Antoinette Louis Brown Blackwell, a leading Unitarian preacher, in her contributions such as *Philosophy of Individuality* and her *Tribute to the Ocean* showed that her intellect increased instead of decreased with her advancing years. Her whole life past seventy has been spent in useful work of splendid value.

Mrs. Osler, mother of Sir William Osler, died at a very advanced age. She was a woman of great energy, force of character and retained her faculties to the end of an exceedingly long life. Clara Barton, born in 1830, the head of the Red Cross from 1881 to 1900, did a great deal of work in her advancing years.

Thus far I have given consideration, in part, to famous persons of past years. I will devote the remainder of the chapter to famous old people who are living or who died very recently.

Doctor A. Jacobi, the nestor of American Medicine, is in active practice at the age of eighty-six after being in practice for over sixty-two years. He is very keen today and his advice is still sought a great deal as evidenced by his busy office. His memory is wonderful and he is able to remember names and dates with the greatest accuracy. His life has been one of very hard labor and he still retains the great determination that has been his characteristic.

Doctor Stephen Smith, ninety-four, has been an active figure in life and until recently has delivered addresses

before societies. At the age of ninety-three he wrote *Who Is Insane?*

Doctor William W. Keen, a major in the Medical Reserve of the United States Army at eighty, is one of the greatest surgeons of the world and his *System of Surgery* was written when he was past the age of seventy. Today he gives addresses and his advice is sought in many matters.

Joseph H. Choate, the great diplomatist, died this year (1918) at the age of eighty-four. He was United States Ambassador to Great Britain at the age of seventy-two and did a great deal of his best work past his seventieth year. Chauncey Depew, active at the age of eighty-two, has been a leading figure in American life and was United States Senator at the age of seventy-five. Cardinal Gibbons at the age of eighty-two is one of the great men of the world today.

Frank B. Sanborn died recently at the age of eighty-six. This famous journalist and biographer of John Brown was in the harness to the last. At the age of eighty-two he wrote the *Final Life of Thoreau.* His greatest writings were accomplished when past the age of sixty. General James Harrison Wilson, eighty, wrote the *Life of Chas. A. Dana* at the age of seventy. Chas. W. Eliot at eighty-two delivers lectures on educational and scientific subjects. He has accomplished a great deal since sixty and at the age of eighty was awarded the first gold medal by the American Academy of Arts and Letters as a recognition of "special distinction." John Morley (Viscount Morley), seventy-nine, who probably writes the best English of any living man, at the age of sixty-five wrote the *Life of Gladstone.* He had been in great political activities since past his fifty-fifth year and at the age of sixty-six was appointed Secretary of State for India.

Sir Robert Laird Borden, Premier of Canada, at sixty-three is very active. Sir Wilfred Laurier, seventy-six, was Premier of Canada from 1896 to 1911. George Brandes, the Danish author, seventy-five, did a great deal of his best work past sixty. Herbert H. Asquith, sixty-two, was until recently minister and First Lord of the Treasury, and has been a very active figure in the present war. Viscount Bryce, seventy-nine, published his University and Historical Addresses at the age of seventy-five. He is very active and has found recreation in mountain-climbing and angling. General Joseph Joffre at sixty-four is one of the greatest men of the present war. The great French soldier, a cooper's son who became general, was recently honored by the French government with the highest military decoration.

Elihu Root is an active figure in American diplomatic circles and was president of the New York Bar Association at the age of sixty-four. This year, at the age of seventy-two, he was sent to Russia by our government on a mission to advise Russia as to the best method of safeguarding the revolution.

Washington Gladden, very active at eighty-three, author and clergyman, has accomplished a great deal since the age of seventy. At seventy-seven he wrote *Live and Learn.* Lyman Abbott, eighty-two, has been editor-in-chief of the *Outlook* since 1893. He is an active figure in American life today and, past the age of sixty-five, has written a great many religious works. William Dean Howells, eighty, was editor of the *Atlantic Monthly* for sometime. He wrote *Years of My Youth* at the age of seventy-seven and at this age was given a gold medal by the National Institute of Arts and Letters. Moorfield Storey, lawyer, seventy-two, one of leaders of the Boston bar, wrote when past the age of sixty-six.

John Burroughs, the American naturalist and writer at seventy-nine, is a keen and accurate observer as well

as master of a peculiarly direct and graceful literary style. He wrote *The Breath of Life* in his seventy-eighth year and some of his best writings were accomplished when past the age of sixty. Thomas Hardy at seventy-three wrote *Satires of Circumstance.*

Henry Cabot Lodge at sixty-seven is an active member of the United States Senate and although physically frail is one of our greatest and most active statesmen of the day. Henry Watterson, seventy-seven, has been editor of the Louisville *Courier-Journal* since 1868. He is one of the most fervent of American journalists and keeps in the harness.

James B. Angell, president-emeritus of the University of Michigan, who recently died, was very active in his eighty-sixth year. At the age of eighty-five he wrote his *Reminiscences.* Andrew Carnegie, philanthropist and famous steel magnate is active at the age of eighty-two. At the age of seventy he wrote *The Life of James Watt.* Simeon E. Baldwin, seventy-seven, was governor of Connecticut at the age of seventy-one. He wrote *The Relation of Education to Citizenship* at the age of seventy-one. He is very much like James Bryce in his reasoning.

George Clemenceau, for many years one of the most forceful figures in French public life, has recently returned to active work for the government. It was Clemenceau who instituted the campaign against German propaganda in France. The "tiger" as he is nicknamed, is known as an exponent of the "big stick." His methods in dealing with labor troubles have been very drastic. M. Clemenceau is seventy-six years old and is reported to have upset nearly a score of cabinets. During the past few years he has devoted himself largely to his newspaper which has been suspended several times because of his severe criticism of the government.

Auguste Rodin, famous sculptor, at seventy-seven was

still too young to die. Art and life needed the supreme inspiration of his genius.

A short time ago there died John W. Foster, our dean of diplomatists, who for fifty years helped make American history and helped to make the history of other nations. He died at the age of eighty-one and his autobiography is a history of American diplomacy and a record of the great movement of the world within the span of his active life. From intimate personal acquaintance Mr. Foster knew more about the affairs of Mexico, Russia, China and Japan than any man living in his day.

George F. Edmunds, eighty, ex-senator from Vermont, has been an active man in senatorial life. William Eaton Chandler, for fourteen years a United States Senator from New Hampshire, in his eighty-second year was as mentally vigorous as ever, although physically somewhat weakened. He passed most of his time until a few days of his death reading newspapers and other current publications relating to the war and public affairs. He was one of the most striking figures in debates in the Senate, often exercising a sharp tongue, always quick-witted and cheerful.

Samuel K. Hamilton, one of the leading lawyers in Massachusetts, finds his principal recreation at the age of eighty in getting to his office before any of his clerks arrive and in leaving sometime after they have all gone home. He is a great worker and many men half his age would find difficulty in following the pace he sets for himself.

Doctor W. E. Crockett, of Boston, at eighty-five years, is a worthy physician and athlete. For many years he has astonished those who know him by his remarkable feats of strength. According to Doctor Crockett, every man at eighty can be an athlete if he takes care of himself. Some of the feats he has accomplished during the last year or so are the following:

Swam across Boston bay; taking a dip at L street in midwinter; walked twenty-five miles in a little more than six hours; put up a thirty-pound dumb-bell 385 times; stands with arms outstretched horizontally for half an hour.

Doctor Crockett is practically a vegetarian, very little meat entering into his diet. Most men, he says, dig their graves with their teeth.

General B. F. Bridges, for twenty years warden at Charlestown State prison, is past the fourscore mark and has been very active. Although now retired he makes visits occasionally to the prison where he greets the old-time prisoners and notes the changes that are being made from time to time.

L. Clark Seelye, the first president of Smith College, is now active in his eighty-first year. To the thousands and thousands of Smith graduates scattered through the land, his name today has a special shrine of its own in their hearts.

Julie Reinhard, actress, orator and suffragist leader, at the age of seventy-three, supports herself, rides, dances, swims and hikes in long parades and is called "America's grand old woman."

We have no better example today on the value of Old Age than in the life of our greatest inventor, Thomas A. Edison. At the age of seventy, during the present war, he has designed, built and operated several benzol plants and this year was made chairman of the Naval Advisory Board. Even though he is deaf he conducts the meetings of the board, and it is said, by a secret telegraphic code given him by his assistant by means of a finger tapping on his knee beneath the table, he is able to follow each word spoken at the meetings.

He has a great capacity for work but has not worked in order that he may at some time retire and live without work. His greatest pleasure in life is work and he does

not look forward to a time when he can rest. He is one of the most joyous men in the world and failures and disappointments he has taken as a part of his daily work. Recently when his laboratory burned to the ground and he lost a great many valuable things, he was not disturbed but the next day began the reconstruction of his plant.

When he is exhausted from work he will tell a funny story, have a good laugh, and keeps an organ in his library on which he has taught himself to play a few of his favorite airs and after these few moments of diversion he is ready to resume his work.

We have no better example today of the value of old age than we have in Thomas A. Edison, and by keeping "in the harness" he shows us the value of work as applied to men of advanced years.

The object of this chapter on the value of old age is not to review the work of old persons but to show that old age is more beautiful than we ordinarily think. Very little has been written on the beauty of old age and little thought has been given to the richness of the world in the accomplishments of old persons. An inference could be drawn from these examples that the older the mind the more able it is to produce things of value. A young man may have more energy for production but he has not had the benefit of the years of experience that those of advanced age have. The purpose of this monograph is to stimulate physicians to look upon old age as a thing worth acquiring and that we may stimulate the aged to carry out the theories they have been thinking of for years.

Many an old person has given years of thought to some subject yet it has not been developed because they have not been encouraged to produce it. At the age of eighty, many men have not the determination to bring

out a book, yet with assistance it could be accomplished and the world would be richer for it.

The Lesson From These Masters

On first thought a person would not realize the application of these examples to a geriatric study. It is a very important lesson, however, because it illustrates not only the great accomplishments of men in their old age, but brings out what I believe is the most important secret of geriatrics, that is, keep the aged at work, and still more if they are sick, keep them out of bed.

"Staying in the harness" is the real secret of bringing about the best results from our aged minds. The older a man gets the more work is necessary to prevent senile changes. I have observed many times, cases of toxemia in the aged which were cured when they were active and at work.

Psychologically, too, "staying in the harness" keeps their minds from the senile death warrant "old age," and the responsibility of work helps them beyond measure.

Attention to the aged, appreciation and glorification of their accomplishments produce a wonderful mental effect upon them. It stimulates them to "keep at the wheel" and give out from their store of experience something that will make the world better.

We all know the extreme comfort in seeking counsel from older physicians, lawyers and other men with years of thought stored in their brains, to be able to get from them something that will make our daily life productive of better results.

Truly old age is sweet in a great many instances and if we give the aged more attention and stimulate them to greater activities we will be richer in a great many ways.

CHAPTER IV

THE CARE OF THE AGED

I devote this chapter to the hygiene of advanced life and include in it attention to the skin and to the simpler things that constitute important details for the old person to follow. Self-preservation is the first law of nature and almost everyone desires to prolong his life. Metchnikoff found that the Bulgarians lived to be 150 years of age and attributed it to the use of lactic acid bacilli in the milk. We have tried this in this country but we find that people are dying every day. In fact, Metchnikoff himself died at an age of about seventy. There are many other things that enter into longevity, among them being environment. The modern method of living, the hustling and noise of a busy world, the telephone, in fact modern business tends to hasten waste in every way. If the Bulgarians lived a life like the American people, they would probably die younger. The habits of life and the influence of external factors do a great deal more to determine a man's existence than anything else. Regular habits of living are essential to the well-being of old people. Few men live to enjoy the slight benefits to be derived from changing their mode of living, for a change in their habits may mean disaster to them.

Old persons are very susceptible to atmospheric influences. The sources of their own temperature are diminished and the blood supply to the skin being poor, they become very sensitive to barometric changes. In old age the change in tissue is waste without sufficient or appropriate repair. Most old people have cold hands

and feet and in general they are obliged to wear warmer clothing than younger persons. Flannel or woolen materials may be worn with advantage three-fourths of the year if the person is susceptible to the cold. The aged frequently suffer from the cold at night and if this is distressing to them, they should have a Simplex electric pad, or a stone, which has been heated, upon which they can rest their feet.

Quetelet in a table drawn of over 400,000 cases found that the greatest number of deaths in persons past sixty occurred in the colder months, December, January and February. For this reason the aged should be very careful in the winter and any slight infection should be promptly taken care of by a physician. If the patient cares to, a winter in the South would be very beneficial. It is said that when the more opulent of the Romans grew old they were sent to Naples.

The proper care of the skin in the aged is essential. Regular baths and massage are necessary. A tepid water bath is excellent in its effect. After the bath, friction may be given either with the naked hand, flannel or with a flesh-brush and should be continued for one-half hour.

I have a patient, a man, aged eighty-three, who takes a Turkish bath once a week. He says it revives him and it apparently has some effect in relieving his bronchial congestion.

Exercise in the aged is one of our best methods of preventing toxemia and in a great many cases exercise will relieve it. An old man gives up his work and stays about a warm house in a chair and the lack of exercise in itself causes toxemia. Many times I have forced old persons to walk and busy themselves about their homes and when possible, advised them to do something about the house involving a little responsibility like gardening or the care of an estate. The best time for walking and

other exercise is shortly after breakfast, and short periods should be selected as the aged easily get fatigued if they do one thing too long. After luncheon a short stroll will ward off the sleepiness.

It is difficult to say how much sleep an aged person requires because each one is a rule unto himself. In general the aged do not require as much sleep as younger persons and they are apt to retire early at night and arise early in the morning. In many cases eight hours is sufficient time for sleep.

The aged usually declare that they have not slept in three, four or five nights. A woman told me that she had not slept in five nights but I had occasion to see her one night and when I arrived she was sound asleep. The noise of my entering the room caused her to awaken and when she saw me she demanded some remedy to make her sleep and denied that she had been sleeping. Many physicians have been deceived into giving morphine for this condition of apparent sleeplessness but if the case is carefully analyzed it will be found that they fall asleep in the chair during the day and when they retire at night they can not sleep. In cases of this kind I usually prescribe a placebo; make them exercise, especially after meals and perhaps give them a glass of wine upon retiring. A little milk with whiskey in it at bedtime may be prescribed and it may be well to have a few crackers and a little weak wine at the bedside to be taken on waking in the middle of the night if they find they can not sleep again.

Sometimes toxemia will produce an opposite effect from drowsiness and cause irritability and sleeplessness. In these cases a good cathartic is the best soporific that can be administered. Tobacco does but little, if any, harm to the aged and no matter what amount they have used for several years it would be poor judgment to change this habit. Many old persons awaken in the mid-

dle of the night and find a smoke from a pipe the best nerve sedative they can find. I know persons who make a few old men presents of tobacco at Christmas and I believe they appreciate it more than they would gold.

A great deal depends upon the care of the skin in the aged. The normal skin of senility is wasted and the excretions are lacking. It is usually very difficult to find an old person who perspires. On the other hand, there may be an excessive perspiration which is very disagreeable, especially at night. To check this excretion of the skin is a serious matter in the aged as the checking of excretions causes the blood to be forced from the surface of the body to the respiratory, occasionally to the digestive and urinary organs, causing congestion of these internal organs.

If the excretions of the skin become checked suddenly, it would be advisable to give the aged person a warm bath. He should take a drink of warm milk or tea and should have a Simplex electric pad, or a hot water bottle, to maintain heat. Excessive perspiration is at times due to nephritis and as it is a compensatory symptom, active interference should be avoided. Sometimes disastrous results will follow injudicious medication in this manner.

Aged persons should avoid retaining urine too long. Continued failure to observe this may lead to paralysis of the bladder and death may be the consequence if the bladder is not relieved. The illustrious Tycho Brahe died in this manner. While riding in the same carriage with the Emperor of Austria, he followed court etiquette and not nature and fell a victim to his temerity.

Recreation in the aged is an important consideration. The senile brain becomes easily fatigued and a theatre or moving picture show may have a complicated plot and the aged person is not able to follow it. As a result he

falls asleep and is apt to remain asleep during the whole play. Musical comedies and burlesque shows do not have complicated plots and are easy for the aged to witness and they feel better for the fun. The senile mind requires something lively and humorous and the aged forget their old age when they are enjoying themselves.

In institutions male and female persons should not be separated. To keep old couples apart who have lived together for years is a serious matter.

Much attention in institutions should be given to bathing as the aged will falsify because they dislike to bathe and as a consequence deceive the nurses, leading them to believe they bathe frequently.

In institutions special care should be given to the eyes and an oculist should correct errors of refraction. Senile persons can pass the day so much better when they are reading and getting their minds off themselves. Old age then is not thought of, and they have a time that they are not depressed by the dread of their last days.

CHAPTER V

WORK FOR THE AGED

Case I.—A man, aged eighty, is the master of his household. He still maintains a little business, just enough to say that he is a business man, and he takes great pride in being independent of his children. Although they are wealthy he will not buy anything that is not within his own means and will not allow his children to pay his bills.

Suffice to say that this aged man is greatly respected by his family, and he is certainly a useful citizen in more than one way. Being self-supporting he is very independent in his manner and he has not yet lost his "grip" on life. This "grip" I would call determination, the power of force that most aged people lack because they become dependent upon others.

Case II.—A woman, aged seventy, when quiet for any length of time develops a renal insufficiency, especially if she is forced to stay in bed. When she gets about again the casts disappear and she improves. I have warned her if she ever becomes ill that it would be to her advantage to keep out of bed. This lady does a great deal of work each day, and it seems that this exercise is essential to prevent the development of renal toxemia.

Case III.—A mariner, aged seventy-five, has chronic Bright's disease, and when the weather prevents him from going to his workshop he develops an increase in his toxemia. Whenever he is ill and is remaining in a chair a good deal I force him to go to his workshop and

exercise. The toxemia always improves when he is exercising.

Case IV.—A man, aged sixty-five, lost his position and immediately developed symptoms of Bright's disease. He became melancholy, had headaches, could not sleep and lost his appetite. His position was given back to him and he has been well since.

Case V.—I once found a letter in the coat pocket of a man who had committed suicide. In his book he had advertisements he had taken from newspapers. A letter he had written to his brother said, "I can not find work; everyone says I am too old to work."

Unquestionably with the aged the lack of exercise will produce a toxemia, especially from renal origin. These old men always improve when they are forced to move about and work is the best remedy for them. I remember an old man who had worked hard for years. His children felt that they could support him and it would look better for them, perhaps more heroic in society, to have their father give up work. The old man's health has steadily failed since he gave up work, and it would have been far better had he kept his position.

The Psychic Element

Old people who are inactive and unemployed have nothing to do but think of themselves, and "old age" is the only thing they can see. I know a lady, aged eighty, who has no disease except "aged eighty." Because she is this age she thinks she can not do things that people of sixty do because she is eighty. I have a patient, a man, aged eighty-three, who disregards his age and takes a Turkish bath every week. Theoretically, because he is eighty-three he should not do this. However, he does not think of old age, is employed, and accomplishes many

things which theoretically he should not do. In other words, he measures himself and governs his activities according to what he knows he can do.

"Old age" to most persons is a death-warrant. When they begin to think of old age they become depressed. The aged are very sensitive, they like much attention and like to be praised. They need much encouragement and we should not allow them to dwell on their bad feelings.

We should provide some work for our aged friends and relatives. I know a man who gives an aged man $10.00 per month for doing errands and taking care of his mail. Another man is janitor in a telephone office; another takes care of furnaces for a few families. It is wrong to think that because a man has worked hard all his life that he should not work any more. All the more reason why he should be kept at work. Never change an old person's mode of living.

In many instances, labor unions have made it difficult for the aged to obtain positions. This discourages the aged when they find that there is nothing for them to do. There seems to be no place for them.

There is another side to the question, however. Aged clerks who have been in a store for a good many years become very independent and do not cater to customers. In fact, they do not take interest in their old customers, consequently the firm loses a great deal of money each year because the owner does not care to discharge the men that he has had for years.

Nevertheless, there are many things that the aged could do and we should create something for them to do.

If there is an aged father or grandfather a position should be found for him and he should be well paid for his services. It may be taking care of a furnace, the care of a garden or lawn, a position as janitor, night-watchman, or any position that will keep him active and prevent him from dwelling on "old age."

With women it is more difficult, but they can do many things, such as sewing, taking care of a part of the house, and in factories there is some work that could be provided for them, if the institution is not placed upon an efficiency basis. For example, a proprietary medicine company could have a department for the aged where they could label bottles or wrap the bottles. Although the production would not equal the same work in the hands of younger people, it would be a humane act to have a place where the aged could work.

It would be an act of philanthropy for every business man who has plenty of money himself to have a department where the aged could be employed in some simple thing like labeling, etc. Even though the efficiency test would not be 100 per cent, yet the aged would be greatly benefited.

Almost every one could find some work for their aged relatives, but usually they are neglected and very little is done for their comfort.

Work and Recompense

It is essential to give the aged a good recompense for their labor. Although they may not produce any great amount of work, a good recompense does them a great deal of good. The aged like attention and praise. Encourage their labors, observe their work and it will be surprising the good it will do them. It takes a very little thing sometimes to amuse them. An aged lady sits at a door with a stick in her hand. A man who visits the house each day always tries to take the stick from the old lady. They have a good time joking in this manner, and this simple attention does the aged lady much good.

The aged like to have you ask them to do something for you. Ask them to do a little repairing around the house and it pleases them very much. It flatters them

to give them this attention. The great problems with the aged could be solved by giving them attention, work and money.

A charity worker once asked me what she could give an aged couple to help them. She was undecided as to whether she should give food, clothing or fuel. I ventured to suggest that a five dollar note in the house would make them feel better than anything else. Give the aged money and they will appreciate it more than anything else. The neglect of the aged, the lack of attention to them does not apply to the aged who possess property or much money. When old people have no worldly possessions in most instances they are neglected. Do not misconstrue this statement, however. I refer to these old persons who, possessing money, demand respect because they are independent, have the power of determination and force and are not dependent upon their children. These qualities command respect in the aged. On the other hand, when they have no worldly possessions they become depressed, lose their determination, become dependent and lose their "grip" on life. This lack of force and determination brings about the so-called "childishness" which does not command the respect for them that they should receive. I believe that the senile mind in most instances would be improved if the aged were financially independent of others. Lack of money produces loss of initiative.

Pensions for the Aged

Massachusetts attempted to pass a law to pension the aged. Business houses should pension their help who have been with them for several years. A firm has lost a man on account of illness who has been in their employ for fifty years. They do not give him any pension. A man who has been with a firm over thirty years has now

developed tuberculosis of the bones and is forced to leave work. The company does not give him any money or even send to him to see if he is in need. When he went to the owner of the factory he promised to help him, but he has not given him enough to be of much service.

This is very unfair to the aged. In fact, it is not showing them the respect that is due them. Business houses that are paying 15 or 20 per cent dividends could easily spare 1 or 2 per cent as a pension for their aged help. When their aged employes are taken ill it would be an act of kindness to send a representative to see if they are in need.

We could all pension the aged, and we owe it to them to take proper care of them. They fondled us in our infancy, fought for us, went through financial tortures to educate us, and deprived themselves of many necessities to see that we had clothing proper for all occasions. In fact, if it came to a critical matter they would have given their lives for us.

As an appreciation of this the majority of aged individuals are neglected, their children fight amongst themselves because none care to take their aged parents to live with them, and it is surprising to see the people in the higher walks of society that not only neglect their aged relatives but are actually cruel to them. Of course, many old persons are difficult to live with, the senile mental state produces a change in them which is sometimes very disagreeable. Oftentimes disease produces a mental state which makes it almost impossible to live with them. However, many diseases would be modified and many senile mental conditions would be improved if we gave them attention, work and money.

Miss Christine S. Foster, of New York, has been experimenting on work for the aged and her work has met with much success. When reverses due to the war

closed the mayor's workshop the old men were not provided for. With her own funds she opened the old men's toy shop in Lafayette Street, New York, bought materials from which toys could be made and paid them a salary for their work. When it was discovered that the toy shop was open to all old men the number increased from 60 to 120. From the Bowery, men who seemed human wrecks, timid, doubting, shivering, in fear of rebuff, were met by Miss Foster and every old man was provided with proper clothing and a place to eat.

In the toy shop the old men worked with great enthusiasm and men who had been refused work time and again because they were old were given a chance. It seemed to open a new life to them. The work was interesting and they could see that it was productive. Others were interested in it and they take great pride in their work.

Miss Foster decided that social welfare should necessarily enter into the care of the aged and besides work, pay, food and a warm place during the day, the question came, where are the old men sleeping? As a result she experimented in a housing plan which has been a success. She hired an old-fashioned flat with four rooms on the ground floor and three in the basement and gave this to eight old men. Every man was neatly and comfortably dressed, and the responsibility of the house rested with the eight old men, with one of them as a manager. Ten cents a day from each man was collected by the manager and it actually covered all expenses. They do their own housework, making the beds, sweeping, washing, ironing, dusting, washing windows and dishes. The increased cost of living recently has raised the cost per day to about twelve cents.

Every morning, before the toy shop opens, an old man is seen with a basket on his arm going toward First Avenue. He has eighty cents to spend and he feels his

great responsibility in making proper purchases. He buys vegetables from push carts and markets. To show how the money is spent the following table is given:

One pound of coffee	.19
One pound of butterine	.35
One pound of brown sugar	.08
One-quarter pound of tea	.09
Potatoes	.25
Soap	.10
Oatmeal	.12
	$1.18

The daily amount is:

Bread	.10
Vegetables	.10
Milk	.08
Meat, not to exceed	.30
	$0.58

For seven days this is $4.06, which leaves 36 cents a week for salt, pepper, matches, and a few other articles. This takes care of eight men.

The following statement from Miss Foster taken from *The Sun,* is very interesting:

"There is the result of a little work—yes, I suppose it has been a good deal of work," said Miss Foster, "with men society had cast out, men who came to me in the toy shop cowed and beaten by the world, who had not known a decent meal or decent bed in months, men who had gone down in the world, some through drink, some through ill health, but gone down nevertheless. They do not want charity, they want a chance, that is all, and personal interest goes a great way.

"These men all come to work dirty, unfit mentally and physically to do more than the light duties of the shop, some of them able only to work a few hours a day. The first change in the appearance I have discovered is a clean collar. They will buy a celluloid collar out of their first money nine cases out of ten. They will manage to get a clean shirt, and I always have tried to have clothes on hand that could meet an emergency.

"There is but one rule for the house and that is no drinking. This they live up to. Some have been able to save from 15 to 25 cents a day. This is splendid. Some have bought new suits of clothes. All have purchased clothing by degrees.

"Six of my eight old men are now about to take places that have been offered them in different capacities. The man who used to be a pilot is securing a place on a barge at a decent living wage.

"These are not the first old men who have gained positions through just this aid in getting a grip on life again. I have had three other flats at different times that were used somewhat along these lines, though not exactly.

"These died a natural death because when the old men left them for work I could not find others to take their places.

"Now there are two old men to be left. These I hardly fancy will be able to go out in the work again on their own responsibility, and so they will form the nucleus around which to build up another group.

"There is talk of moving the toy shop further uptown, and in any event it would be best to have the flat nearer it. This location in East Eighteenth street was selected when the shop was in Lafayette street, not a great distance away, but the removal to Mott street has made the distance too great for regular walking.

"My ambition is eventually to hire a house for old men. With the added numbers that could be accom-

modated the same rates could be arranged, and the result would be that poor old men who have to frequent filthy lodging houses and half starve for lack of funds to buy sufficient food would be well housed and fed.

"It has been suggested that such a house be in the hands of a committee to run it, but this would never work. Under such conditions the suggestion of charity is manifest and this the men do not want and I can not see that it is either necessary or just to them to place them in such a position.

"In this plan, as things are run, each man feels a real responsibility, he knows that if he fails to do his part the success of the house is doomed, and he enjoys this responsibility placed on him.

"I never had it brought home to me so strongly that they are absolutely friendless as I did one day last winter when I was summoned to a hospital to see one of my old men. He had been taken ill and removed there. When asked to name his nearest friend he gave my name, and I must say that I felt in one way greatly honored to feel that he considered me as such.

"My interest in unfortunate men first arose when I sat watching day after day, even in the bitterest of winter weather, the men that I could see from my window. Beekman place is on the East River. By my house are ledges of rocks. I have seen men seek shelter from the storms under the rocks. I have seen them remove their shirts even in cold weather and go down to the river to wash them, sitting shivering covered by a thin coat in the cold winds until the shirts dried, spread out on the rocks in what winter sun there might be.

"Men know that there is always a cup of coffee and some bread at least to be had at our house. No man who ever comes to the door is turned away, and in all the years I have had what some call 'Miss Foster's Bread

Line' I have not found that those who come are of the begging class, or will take undue advantage of that which they can secure for nothing.

"Many of these have been helped to positions. In my heart I most pity the broken man, for who will have him? You can find a place for the average old woman; she can help in a house, mind children, but what can the old man do? Go to the river, for all society cares. Give him a lift by encouraging him, getting him back to health, and he will reward you nine times out of ten by making good."

It will be seen that Miss Foster's work is the outcome of giving the old man a chance. The work of old men and women could be made productive if we would give attention to them and many other things could be provided for them in the way of work. The toy shop has been a great success and could easily be placed on an enormous scale by some person who is financially able and disposed to assist the aged in proving that they are useful. It is said that in the Indian reservations old persons are literally starved and they are allowed to sit outside the buildings without any attention. The Indians believe their aged are useless and give them little or no consideration. In a general way this same attitude exists almost everywhere regarding the value of the aged and it will only be by systematic and prolonged labor that we will be educated to the fact that the aged are of value and that we require them in our daily life.

CHAPTER VI

KEEP SENILE CASES OUT OF BED

CASE I.—A war veteran, aged eighty-three, had an attack of senile bronchitis and was failing. He was very dyspneic and toxic. I ordered him to get in a chair and forced him to get out of bed several times a day. The results were excellent; he breathed easier, slept better and seemed in better spirits. He was down stairs the next day when I visited him.

CASE II.—A man, aged seventy-five, had been ill seven days with senile pneumonia and apparently there was no hope for his recovery. He was forced out of bed on the seventh day and it seemed to relieve him a great deal; it gave him new courage to fight the battle and he recovered.

CASE III.—I remember a lady, aged seventy, who was taken ill very suddenly and death was apparently near. I forced her out of bed the next morning and on eight different occasions I saw her recover from similar attacks.

CASE IV.—A lady, aged sixty-five, had occasionally been ill in bed from various diseases which did not have any effect on a kidney condition. Each time she was in bed she developed a renal insufficiency and the urine showed many casts. Only after she gets out of bed does the urinary sediment becomes normal.

CASE V.—A man, aged eighty, was very ill with cardiac weakness; he was hardly able to hold his head erect. He was forced to keep in a chair, however, and

the sleep he obtained was in a sitting position. For over two weeks he was in this state but he was not allowed to lie down. It seemed cruel, because he was too sick to sit up, yet we knew this was the only chance he had for recovery. We knew that a senile case rarely dies of cardiac disease unless cerebral hemorrhage supervenes. After several days of suffering the old man recovered sufficiently to ride in an automobile to the doctor's office.

This method of treating senile cases apparently works well in most instances. There are very few cases where it can not be applied. It seems cruel many times to resort to this, but the family must be taught that old people do not do well in bed and when a senile patient remains in bed a short time it is almost an impossibility to get him up again.

It is interesting to note in Case IV that casts always appeared when the patient remained in bed any length of time. I have seen many cases like this where the urinary abnormalities disappeared when the patient was out of bed.

Inactivity in the aged predisposes to toxemia whether from renal or intestinal origin. Many of the cases of chronic uremia will not improve unless a certain amount of exercise is taken each day. I remember an old mariner who had a renal toxemia, whom I forced out of doors and demanded he go to his boat house and give orders each day. He improved and continued to gain as long as he kept up his exercise. It seems that a little exercise was beneficial to him.

The Psychic Element

When old persons are sick in bed they feel that their last is approaching and "old age" stares them in the face. "Old age" to them is a death warrant. The fam-

ily usually feel that the end is near; there is no apparent hope of recovery, owing to the advancing years, and therefore neither much anxiety nor interest is shown.

Remaining in bed the old person sees no future ahead and loses his grip on life. When this grip is broken death is sure to come. When "old age" stares anyone in the face it is far from a pleasant thought.

On the other hand when a physician orders a senile patient out of bed the old person feels encouraged to think that he is able to get up. The family look at it in another light and in all ways the future for the old man is not so bad after all. More interest is shown in him and he regains his grip on life which is all important in looking for a recovery.

The psychic element is important in all illnesses in the aged for without attention to this very important detail many an aged patient will die. When an old man sees "old age" before him he loses all hope.

In senile cases much depends upon the encouragement given them by the physician. Do not tell them they will get better or they will think you are merely encouraging them. It is better to make plans for them as to what they will do when they get out of doors, like working in a garden, etc. In this way they get confidence in what you say and it has a very beneficial effect.

Postoperative Treatment in the Aged

Surgery in the aged requires the application of this rule as in any other condition. In this particular it may be said that usually the best hope we have of recovery after surgical operations in the aged is to get them out of bed the next day, no matter what the nature of the operation is. If it is a hernia operation or appendectomy the same rule applies.

Postoperative cases if kept in bed will not do well in the vast majority of instances. Pneumonia, renal or intestinal toxemia develops more rapidly and there is a general asthenia as a result. If the aged patient gets out of bed on the next day after the operation, the danger of these complications is lessened and although there is danger in allowing them this peculiar privilege, yet it is the lesser of two evils.

Getting out of bed gives them the courage to fight their battle more courageously. After all, in the treatment of senile diseases, the keynote is to encourage them and to give them plenty of attention. A kind chat with them about things that interest them sometimes has a better effect than medicines.

CHAPTER VII

CARE OF THE EYES IN THE AGED

A man, aged seventy, told me that he thought it would be impossible to obtain properly fitted glasses because of his advanced years. He had always been very fond of reading periodicals and books, but since he has not been able to see well he has spent many a lonely hour.

He was delighted to find that it was an easy matter to correct his hypermetropia and it has proverbially made a new man of him. He had glasses that he had selected from an optician's scrap-box, but in time had not been able to see reading type at all.

In the aged a little attention to the eyes will produce not only gratitude on the part of the patient, but will at times entirely change the mentality of the old man.

Many aged persons will require a strong lens, for example 6.00 or 6.50 convex spherical. However, great care must be exercised in the examination because they are apt to deceive to the extent of taking a lens that is too strong for fear that the glasses will not magnify enough. Their conception of a good pair of glasses is one that will magnify a six-point type to an eighteen-point face.

When they take lenses too strong they find after they have had them a short time they can not wear them. To prevent this I usually take the lenses that I think are correct and let them read in another room for twenty minutes to see if they fit properly. Many times in this way I will detect the mistake before they have the prescription filled.

Again, the eyes in the aged are not the same each day. For example, one day plus 3.50 may be the proper lens and a week after a plus 4.00 will be correct. In these cases I take an average at the end of a third examination.

Senile patients are apt to complain that they can see out of one eye better than the other, but unless the difference is marked I give the same strength lenses for each eye. If too great a change is made the glasses when completed will be useless.

A senile person should not look at one object over ten minutes without changing the view. There are a few old persons who read "love stories" and when they read them they are apt to read several hours at a time without resting the eyes.

Senile Astigmatism

Many of these senile patients show varying degrees of astigmatism and unless great care is shown a mistake will be made. If the astigmatism is not very marked, it is better not to correct it for reading alone. For example, if a sphere will give fair results without a cylinder it is better not to use the latter. Simply because there is a refractive error does not necessarily signify that it should be corrected.

There are some patients who can not be fitted without cylinders. There is also a certain type of senile case that no lens will improve either for reading or distance. It is far better in this not to prescribe any lenses at all.

Senile Conjunctival Changes

The conjunctivæ in the aged are a barometer of the general health in certain cases. For example, a man who presents red conjunctivæ in which the vessels are visibly injected, besides a relaxation and slight eversion of the lids, invariably is suffering from an increase in blood-

pressure. The congestion of the conjunctivæ goes with a slight general subcutaneous edema.

A lid that is everted also indicates general lack of tone and oftentimes gives the indication for the use of iron.

Senile Retinal Changes

To a degree, arteriosclerotic changes in the retina are normal in the aged. However, in those cases in which the blood pressure is abnormally high, in diabetes or albuminuria, retinal hemorrhages from the blood vessels in which there is endarteritis will be seen. Occasionally a thrombus of the central artery will cause blindness in one eye. The sight rarely improves in these cases due to embolism or thrombosis.

The ophthalmoscopic examination is of great value in the diagnosis and prognosis of senile kidney diseases. It must not be forgotten, however, that an evidence of arteriosclerosis is normal to a degree in all senile patients.

Arcus Senilis

It is commonly supposed that the arcus senilis denotes old age and also fatty degeneration. This is not true for it does not always indicate arteriosclerosis or any other disease. It does not interfere with sight or signify that a serious eye disease is in its incipiency.

Presbyopia

Presbyopia means difficulty in accommodating to near objects, usually beginning between the ages of forty and fifty. These patients require lenses for reading only. The presbyopia is undoubtedly due to sclerosis of the lens and a weakening of the muscles of accommodation.

The Senile Pupil

A contracted pupil in the aged, even to the extent of a "pin-point pupil" may not mean anything and may not signify that the person is addicted to opiates. They are due to changes in the nerve supply and in the muscles.

An irregular pupil may not indicate syphilis; unequal pupils have no significance and dilated pupils are apt to show a relaxed condition of the body in general. Nor do pupils which have lost their reflexes always indicate locomotor ataxia. I have seen several senile patients who presented the eye symptoms of locomotor ataxia and even inability to walk with the eyes closed. In these particular cases these symptoms were due to a chronic nephritis.

The Sclera

One thing is almost certain in prognosis of the aged. In a senile illness if you can touch the cornea with your finger without any reflex resulting, the patient will probably die.

The color of the sclera in the aged is not always important. A yellow or bluish colored sclera may not be abnormal but usually a blue sclera denotes anemia and if the yellow color is marked, disease of the liver or pancreas must be suspected.

CHAPTER VIII

SENILE MENTALITY

With advancing years the mental faculties become impaired but this impairment bears, apparently, no relation to the physical changes in the brain. Despite the advances made in psychology we are still unable to determine upon what characteristics of the brain the activity of the various faculties depend. Nor can we satisfactorily explain why certain faculties or mental powers wane, why others retain their brilliancy or appear stronger in advanced life. Memory fades early and the aged person must make a conscious effort to retain new impressions or recall old ones. Yet the aged frequently exhibit a remarkable power to recall early events that had been forgotten for many years. Usually this is not a feat of memory for the individual can not recall these events by the power of will. They appear unbidden, arising as figures of the imagination emerging from the crypts where the long-forgotten facts have been hidden. At other times an incident will cause them to reappear.

An aged singer achieved fame during the Civil War by singing a popular song of the day. He sang the song daily, often several times a day for a couple of years, until the song lost its popularity. After a lapse of forty years he was requested to sing that song again but he had forgotten it and for several days he went around humming bars of tunes in the hope that one would recall the old song. He could not recall a bar of the air nor a line of the song until someone played a few bars which he instantly recognized. These few bars did not recall the others and not until he had heard the whole tune

played could he remember it. As an encore he sang another song of the same period, one he had sung but a few times forty years before, yet which came to mind without effort or intention. This man's experience is characteristic of the faculty of memory in the aged. In most cases names are forgotten first, usually the names of casual acquaintances. After names, dates are forgotten and in some cases the time relation of events can not be recalled. Thus, a Civil War soldier could not remember if he was married before or after the war. A widow whose husband died while holding a government position during Grant's administration, insisted that he died a few years ago and that only one or two administrations intervened since his death, that the Spanish American War took place before his death, and that her children were 10 to 20 years younger than their real age. The woman was intelligent and realized that there was something wrong, that the dates and ages did not coincide but she could not understand the inconsistencies.

Memory usually shows signs of impairment soon after the brain has gained its maximum growth about the thirtieth or thirty-fifth year. After this time it becomes more difficult to retain new impressions and in old age a conscious effort must be made to retain them. A new language may be learned with ease in youth, with difficulty in middle age, while it will be very difficult to learn a new language in old age. A single reading of a book in youth may suffice to produce a clear comprehension of its import; in old age it will be necessary to read each chapter several times. Prolonged or concentrated attention, which is necessary to absorb and retain new impressions, causes brain fag in old age and this is one of the main reasons why it is difficult for the aged to remember things. Unless it is something which will rivet the attention the event or sight will not be impressed on the mind and it will not be retained and therefore it can

not be recalled. The mechanism of recall becomes impaired about the fiftieth year and thereafter it becomes increasingly difficult to recall recent events, names, dates, etc. The impairment may become so great that the event just past may be forgotten and the closest associations, as the existence of children, the location of home, the needs of the body, may be forgotten. This condition is called senile dementia.

The reasoning power increases for two or three decades after the brain has reached its maximal strength. In advanced age the quality of this faculty may not be impaired but the quantity of work that can be done is less. The writer who could write for hours without intermission must now make frequent stops. Now after an hour or two brain fag sets in and if he continues to write mental confusion ensues and this ends in mental exhaustion with inability to think. A famous old physician whose writings are well known, recognizes his mental limitations today and applies his knowledge to his present day work. Formerly he could write chapter after chapter without intermission, ideas following each other freely and logically and his original manuscripts showed few changes. Now he writes only when his mind is free; he writes slowly and carefully and the moment brain fag sets in, he stops though it be in the middle of a word. His ideas today are as logical, as brilliant, as clear and decisive as ever. But where formerly he could write a chapter in three or four hours of consecutive work, he will now write a few sentences, then stop and it may be days before he will write a few sentences again. In a comparatively recent manuscript this was shown clearly, each day's work being written on a separate sheet. A chapter containing 140 lines was written on sixteen sheets. The smallest amount of work, containing four lines was a memory task involving references to other

authors. On other days when reason alone was employed he could write ten to twelve and one day fourteen lines.

A lawyer, now eighty-four years old, shows in his letter the result of brain fag. He begins rationally and deals with the specific purpose of the letter but it soon becomes rambling and he talks of matters entirely irrelevant, of reminiscences, etc., and unless something occurs to interrupt him he ends at the bottom of the sheet with illegible scrawls.

We often hear of persons who do marvelous work in their old age. If we examine closely into their mental activities and compare these with their mental activities in earlier life, we will find that in every instance the brain becomes tired more easily, causing brain fag. In youth several impressions can be received and retained at the same time, in the aged they will confuse and irritate and rapidly produce brain fag. This example has been frequently given. An old man can watch a one-ring circus with pleasure, while if he attempts to watch a three-ring circus his mind becomes confused and brain fag results. He can not maintain attention very long and when watching a parade his mind will wander after seeing a few companies. When listening to a sermon or lecture he soon falls asleep not through inattention but through excessive attention which produced brain fag. If he makes a conscious effort to maintain attention he will forget the early part of the sermon or lecture, an observation which can be made at any medical meeting where old physicians attempt to discuss papers. They will either confine their remarks to the early part of the paper, having dozed through the time the latter part was read, or they will discuss the latter part having forgotten the earlier part of the paper.

The aged lose control of their emotions and they will laugh or cry upon the slightest provocation, sometimes without any apparent reason. A sad thought will cause them to weep although the matter is in no way connected with themselves. Aged women frequently cry when seeing a funeral, sometimes when seeing a wedding cortege or anything else in which an element of sadness exists or can be imagined. The aged are, however, usually serious, often morose or apathetic. Many exhibit a hopeless resignation to the inevitable and are constantly depressed, in others there is an unexpressed rage at their impotence. The fear of death is exhibited in various ways or it may be suppressed but it is present in almost every case. After the senile climacteric when the mind becomes dull this fear diminishes or passes away along with other emotions.

The will, like the other faculties of the mind, becomes altered in the aged. In some cases it becomes weakened and the aged person who was in earlier life a dominating personality, is easily swayed from his purpose or led by the simplest ruses to contradict himself. Occasionally, an aged person will show a dogged determination which neither threats, pleading nor reason can alter, yet after holding out even against argument which he will acknowledge correct, or against force he will suddenly take the opposite view or position.

While most of what has been said on senile mentality applies especially to the intelligent, educated individuals, the dull, uneducated mind reacts in the same way in advanced life. The dull peasant who never was emotional will not become emotional in old age, but he will exhibit eccentricities in will. Intelligence, however, becomes gradually weakened until he becomes a complete dement, ignoring the demands of nature and even losing the fundamental instinct of self-preservation.

CHAPTER IX

SENILE DEMENTIA

There is no sharp dividing line between senile mental impairment and senile dementia, the former a normal physiologic senile condition, the latter, pathologic. The determination of senile dementia depends upon the physician's conception of the disease, and, in the individual case, upon the existing condition as compared with the mentality of the individual when at its best, or with the ordinary mentality of other individuals of the same age and intellectual status. With advancing age the mental faculties, reason, judgment, memory, will, the emotions, are all weakened. There is no uniformity in the order, extent or rapidity of their impairment although memory is usually the first to show weakening.

The term dementia is applied to marked impairment of reason and judgment. The senile individual can usually make a conscious effort to concentrate his thoughts, to judge and to reason rationally. When he is unable to do so he is suffering from senile dementia. Memory impairment alone is not usually an evidence of senile dementia but memory may be so far impaired as to make reason impossible.

There are, however, medico-legal cases in which the question of senile dementia hinged upon the extent of memory impairment. In one case the existence of a favorite child was forgotten when a will was drawn and after the death of the man he was declared a senile dement although at the time he made the will he was able to reason and discuss matters rationally and manage his

business affairs. The medical and the legal conceptions of senile dementia differ except on advanced cases as the law does not recognize border line cases, which under some circumstances would be called senile dementia and under other circumstances would be called simply senile mental impairment. The following is a typical case. A lawyer, who died recently, was a national character from the time of the Civil War until about ten years ago when he was the government representative at an international congress. A few years later he began to show evidences of mental impairment. He began to lose interest in the affairs of the day and became careless in his habits. Formerly extremely neat in his personal appearance and in the appearance of his surroundings he now went out of the house occasionally without having his shoes polished or his necktie properly adjusted or with his coat or vest unbuttoned. His reasoning powers were unimpaired but he found it now necessary to look up authorities which he formerly could quote offhand. He became egotistical and often boasted of what he had accomplished. These traits gradually became more pronounced and his egotism became so dominant that a few years ago, upon the occasion of an anniversary celebration he requested his friends to send him letters of congratulation and commendation which he could publish. With his failing memory his reasoning power waned but under great stress he could arouse his reasoning ability and his former power as a brilliant speaker. On such occasions he gave no evidence of mental impairment, but if the occasion called for prolonged mental effort he became confused and stopped even in the midst of his speech. Still later he did not realize his mental confusion and while the beginning of his speeches were rational he lapsed into rambling talks on various subjects, usually reminiscences or self-laudation. At a medico-legal meet-

ing he spoke on the subject of insanity as a defense in murder trials. For a few minutes he spoke with the ardor of the trained orator, quoting authorities and presenting unanswerable arguments. He referred to a murder on a railway train and described the car. This led his thoughts to railroad trains and railroad companies and following the description of the car he described the legal division of a railroad company, then the organization of railroad companies and for several minutes he spoke of his participation in the organization of railroad companies in the United States. His mind was now centered upon himself and the rest of his speech dealt with various matters relating to himself. His speech degenerated into a prattle of self-laudation but his mind was confused and he was called to order. The president's rap with a gavel brought him momentarily to his senses and he sat down, but kept mumbling to himself during the remainder of the meeting. At the beginning of the meeting this man spoke sanely and rationally without the slightest evidence of mental impairment; half an hour later he was a jabbering dement. Yet after a night's rest he was mentally as bright as usual and he conducted his business in such a way that one not familiar with his mentality when at its best would have declared him sane and rational. This case is typical of mental decadence approaching the condition of senile dementia. His peculiarities were looked upon as harmless eccentricities yet they showed clearly weakened mentality. He would call his office boy from the anteroom and for an hour he would tell the boy of his legal exploits revealing secrets which exposed criminalities, and many acts including indecencies which a sane man would not talk about. He made useless purchases which he sent to his friends as gifts. He wrote numerous letters to his friends and these letters showed the progressive mental impairment which finally became

obvious to the stranger. In his letters the first few lines were rational, then they became rambling and ended in undecipherable scrawls. He became absent minded and several times he lost his way between his home and his office, a few blocks apart. Later he forgot the names of his friends and still later when picked up on the street perhaps a mile from his office he could not recall his own name and address. His reasoning power waned with the loss of memory and a year after the medico-legal meeting referred to he was clearly a senile dement.

The following case shows a variation from the usual progress of senile dementia. The man, aged seventy-five, was an ignorant farmer who could not read or write and could calculate only to twenty. He was never a keen reasoner but he possessed good judgment, craftiness and an excellent memory. He could not learn, but trivial events in his life, such as seeing a neighbor's barn on fire, etc., were remembered in old age. It is usual in advanced life to remember early events but these memories arise spontaneously and can be recalled at will only with difficulty, usually through the association of ideas. This old farmer could recall events at will. Asked if he ever saw a barn on fire he could instantly recall every barn fire that he ever saw. But he gradually lost the sense of time and every event whether occurring the day before or during his childhood happened "long ago." He lost the sense of relation between things and while continuing to work in the fields he did his work perfunctorily, going through the motion of raking, for example, whether a rake, hoe or spade was put into his hands. Life-long habits were continued instinctively without a realization of their import, but he could be led away from his purpose by a child. He gradually became mentally and physically weaker and spent most of his time in bed or sitting undressed by the bed. Still he retained his mem-

ory for past events and his neighbors thought it a great joke to put some question to him and leave him while he was answering it at length. He would continue to talk until he had answered the question fully, although there was no one in the room. In this case there was never an exhibition of egotism or thought of self, no emotional outbursts, nothing more than a gradual loss of the reasoning power.

The following case presents another phase of senile dementia. A woman now past eighty was formerly a dominating personality in her home and in social circles, also a shrewd business manager. About ten years ago increasing physical disability forced her to give up business and social affairs and leave the management of her home to her children. She became deeply religious and spent most of her time reading religious literature or in such church work as would not oblige her to leave her house. A few years ago a marked change was noticed in her mentality. Though physically incapacitated she again took an interest in business and society and in her home but was now extremely critical and faultfinding, domineering and stubborn. Opposition or contradiction gave rise to violent outbursts of temper. She made extraordinary demands but her memory was failing and she soon forgot them if they were not carried out. Thus she insisted upon going to a ball and purchased a ball dress. Her family, realizing the futility of opposing her, submitted to her whim and made no attempt to persuade her. The exertion of dressing for the ball exhausted her and she fell asleep while partly dressed. They undressed her and put her to bed and in the morning she had no recollection of the ball or her preparations for it. She developed an exaggerated idea of her importance and when the deference to which she thought herself entitled, was not shown her, she became abusive and later she became sus-

picious and morose. She would frequently get up at night and ransack drawers and closets but would not say what she was looking for. Delusions of persecution by her family developed and one daughter was obliged to keep out of her sight for a month. When the daughter reappeared the mother had forgotten about the trivial event that had aroused her resentment and suspicion and had even forgotten that she had not seen her daughter for a month. Still the old lady was constantly afraid that her family would put her out of the way and it was necessary to place her in an asylum. Here she felt safe and she began again to make extraordinary demands, consistent with her delusions about herself. She wanted youthful clothes, bright colors, paint and powder, curling irons, perfumes and perfumed stationery, began writing erotic letters to men long dead, never completing a letter or asking if they replied. Later another change occurred. She would sit for hours apathetic or brooding and occasionally she became loquacious, talking nonsense. Now she sits most of the time talking to herself and must be forced and helped to eat, dress and go out of doors. She is also growing physically weaker and may soon succumb to general debility.

These cases present the ordinary forms of senile dementia, but the terminal vegetative stage exhibited in the first case is rarely reached. Usually, senile debility or intercurrent disease carries off the patient soon after his mental impairment is so great that he becomes oblivious to the demands of nature. The senile dement becomes indifferent to the natural call for evacuation of the bowels and bladder and the consequent dribbling of urine and feces frequently causes local irritation and inflammation, which may become gangrenous. Prolonged retention of urine causes cystitis and by extension a pyelitis follows, or the damming back of urine may produce renal irrita-

tion so great that an acute nephritis and uremia is produced. Usually the dement loses control of the sphincter and there is a constant dribbling of urine. Loss of control of the rectal sphincter causes evacuation of feces, but there is usually persistent constipation partly through lack of exercise, partly through failure to make an effort to empty the bowels, in addition to the usual causes for senile constipation. There is consequently autointoxication with its train of sequelae and this may cause death. Bed sores occur frequently and these become infected and a general septic infection may thus be produced. Occasionally a hypostatic congestion occurs. Many senile dements die after a short illness or suddenly and the autopsy reveals a pulmonary congestion or acute nephritis.

There is no successful method of preventing or curing senile dementia, the disease being the progressive continuation of the physiologic senile mental impairment. Many cases are temporarily benefited by mental stimulation. Memory may be stimulated by old familiar airs or plays, or by reminiscences of early days. Sights which are of daily occurrence such as visits of members of the family will produce no impression upon the patient while an old-time friend whom he has not seen for years may arouse a train of reminiscences and temporarily restore memory.

If the hearing is good, aural impressions are more likely to arouse memories than visual impressions. A senile dement who was a Civil War veteran was taken frequently to military parades, but these made little or no impression upon him. The sound of cannon fired upon the Fourth of July aroused him and for a few days he spoke of his war-time experiences. It is very difficult to arouse reason and judgment. Occasionally, under some extraordinary stimulus, reason will be temporarily

aroused but interest and attention can not be maintained as brain fag sets in rapidly. The husband of a senile dement died while she was in an asylum. She had not seen him for several months and she did not recognize him when he visited her. She was not notified of his death but was taken to the house on the day of the funeral. She was apathetic when led to the coffin and gazed abstractedly upon the corpse for a few minutes. She then suddenly gave a scream, threw herself over the coffin and called her husband's name, begging him to take her with him to the grave. She became quiet in a few minutes, was led to a chair and promptly fell asleep. She was awakened with difficulty, but when awake she again relapsed into the apathetic attitude and could not again be roused to a realization of the proceedings. An effort was made to induce a senile dement to sign a will. Constant urging annoyed him and he became suspicious that some harm would come to him and this roused for a moment his reasoning faculties. He listened to the reading of the document and objected to some of the provisions. Before the reading was completed he fell asleep and when awakened his mental powers were so dulled that he could not be induced to hold the pen in his hand or pay any attention to what was said to him.

Proper recreations will help to retard the senile mental impairment, but these as all other measures for improving senile mentality are of temporary benefit, and useless when the mind has become so weakened that it can not comply with the instinctive measures for self-preservation.

CHAPTER X

DIET IN OLD AGE

Habits in eating extending over a period of years should not be changed no matter how bad the habit may be. It is often dangerous to correct habits that may have even a pernicious effect. I have seen many cases of men who suddenly gave up drinking or the use of opiates with the result that they did not live long.

Most aged people who are now living used a different variety of food when they were young than we use today. In the past years the coarsest food was the rule and a man who was given this kind of food in his earlier days should not change it now.

Regularity of meals for the aged is an essential and should be carefully observed. Broiled and roast meats are usually well borne. The older people in order to render a mutton chop tender and juicy would cook it between two other chops. In this way the inner chop would escape any hardening from the fire and it would remain tender throughout. Mutton is the most satisfactory meat. Fat or meats that have been pickled are harmful. Tripe is usually easily digested and the animal jellies are allowed. Fried meats are not as readily digested as boiled or broiled meats.

Milk is the most satisfactory article of diet because it is the most easily digested and contains the least amount of material from which toxins may form. Milk protects the kidneys and furnishes all the principles for good nourishment. In acute gastritis or acute nephritis an absolute milk diet is indispensable. Whey and buttermilk or koumiss or milk and vichy, equal parts, may be used.

Birds are ordinarily satisfactory except ducks and geese. For old persons game should be kept till it is tender but not until it becomes high. Fresh eggs are excellent for the aged. They may be prepared in any way. A raw egg beaten up with a glass of sherry and a little sugar with a piece of toast or dry bread, make an excellent and palatable lunch.

Fresh fish, except bluefish, is permitted for the aged. The oily fishes as eels, herrings, salmon, etc., should be avoided as they are apt to disagree, and pickled or smoked or salted fish should be forbidden altogether.

Most vegetables may be given, but peas, beans and cabbage tend to cause gas in the stomach and should be avoided. Cucumbers and tomatoes should be forbidden.

Plain puddings, such as rice, sago, arrowroot, bread and tapioca are allowed. Rich puddings and pastry should be taken only in moderation. Fruits generally are beneficial. Sometimes a baked apple or prunes will help to regulate the bowels.

Ale and beer as well as wines are excellent foods for the aged. Malt liquor will do them no harm unless they are of a bilious nature or suffering from nephritis. "Wine is the milk of old age." A glass at luncheon and a glass or two at dinner may be taken. Sherry and port wine do not effect the stomach and seem to give them strength. Bordeaux or Red Wine is satisfactory in cases of chronic nephritis and these are also excellent tonics for the aged.

The following diet list includes the foods best adapted for the aged, being nutritious, easily assimilated and leaving little urea-forming refuse.

Breakfast

Apples (baked, raw or stewed), oranges, grape-fruit, grapes, berries in season, cantaloupe; Eggs—soft-boiled,

shirred, scrambled, dropped on toast; broiled chicken; broiled honeycomb tripe; Fish—mackerel, perch, pickerel, white fish, trout, cod, haddock, halibut; baked potato; stale or toasted bread with plenty of butter; tea, coffee, or glass of milk.

Dinner

Raw oysters or clams; soups (preferably purees), pea, bean, tomato, potato, asparagus, celery; chops, beefsteak once or twice a week; Roasts—beef, mutton, lamb, veal, chicken, tongue; Fish, broiled or baked in cream; Vegetables—potato, spinach, lettuce, stewed celery, cauliflower, beets, squash, green peas, asparagus, string beans; Salads—lettuce, tomato, endive, escarole with French dressing; Dessert—apple, tapioca, sago, blanc mange; crackers and cheese—Camembert, Brie, Roquefort, cream, old-fashioned curd, cottage; one glass of milk or a cup of tea or cocoa.

Supper

Eggs; lamb stew with vegetables; baked potato, bread (stale or toasted) with plenty of butter; stewed fruit; one glass of milk, stale bread or crackers and milk with blue berries or baked sweet apples.

Vary the diet from day to day.

Do not eat fish and meat, meat and eggs, or fish and eggs at the same meal.

Meat or fish should not be given oftener than once a day.

Three or four glasses of milk should be taken daily, either with or between meals.

It is wise for the aged to adhere to regular hours. It may be well to strive against falling asleep in the chair after dinner as it is said to cause cerebral hemorrhage.

The old rule that when we are ill we should take small

quantities of food frequently does not apply to the aged. The process of digestion is longer and it takes a few hours more for digestion to be completed. Therefore, it is well with the aged to allow five or six hours to elapse between meals. In this way the stomach has an opportunity to rest.

In my sections in Senile Diabetes and Nephritis will be found a discussion of diet in these diseases. In many conditions of the aged, I do not change the diet because a change in the mode of living in the aged is not well borne by the system. Old persons who in their younger days were obliged to eat coarse food must have this kind of food now provided they have had it for several years.

The diet given above is a protective regimen for the senile kidney. This diet is also applicable to chronic nephritis, rheumatism and gout in the aged.

I have said nothing here of scientific feeding by calories and percentages as we are rarely able to carry out scientific feeding on the calorie basis in the home and seldom in institutions. As a matter of scientific interest it may be stated that the aged require less food of all kinds and less calories than in earlier life. Between the ages of seventy-five and eighty, the female doing light housework and the man doing no work, but taking sufficient exercise, require from 1350 to 1500 calories a day. The food quantities in a number of senile cases were found to be about 50 grams protein, between 170 and 180 grams of carbohydrates and from 35 to 50 grams fat. In the case of a man eighty-five years old the quantities and caloric value of the food could be fairly determined, the diet consisting almost exclusively of milk and bread, with an occasional baked apple and on rare occasions a small piece of chicken or turkey and a glass of wine. In this case the daily amounts were, protein 50.43 grams, carbohydrates 172.8 grams, fat 49.88 grams; calorie value 1415.

The proportion of protein to carbohydrate was 1 to 3½ (1 to 4 in maturity), the protein factor being slightly less than half the amount required in maturity, the carbohydrate factor slightly more than one-half, while the amount of fat was but little less than the amount required in maturity.

When the teeth fall out and meat can not be chewed, meat must be finely chopped or omitted altogether and when omitted protein from another source must be substituted. A sufficient amount can be obtained in milk, eggs or the legumes.

The sense of hunger is not a good indication in the aged of the necessity for food or the quantity that should be taken. The sense of hunger is often perverted and they will feel a gnawing sensation or a sensation of emptiness in the stomach shortly after a heavy meal and at other times there will be no desire for food though the stomach is empty. They are generally like children in their likes and dislikes, gorging themselves when given some article of food that they like and indifferent to the food when the dish is not relished. Owing to the degenerative changes in the taste bulbs the food must be highly seasoned, either sharp, sour, sweet or salty, otherwise it is tasteless or insipid and they will reject it. An excessive amount of salt is detrimental to the kidneys but the spices, acid and sugar are beneficial in old age.

While habit is the main factor in the selection of food, when senile changes in taste occur, or when mental impairment appears, common sense must be used to select the kind and quantity of food best suited for the aged individual.

CHAPTER XI

SENILE CONSTIPATION

In the clinics of Mt. Sinai hospital, where many aged people attend, I was surprised to find that almost every disease they presented could be traced to constipation. In treating the aged, if we give attention to the bowels, we have solved one of the greatest problems of geriatrics.

A consideration of the normal degenerative changes accompanying senility will at once give us the reasons why most persons in advanced life are constipated. First, there is a diminished capacity of the stomach and intestines due partly to thickened mucous membranes and partly to the lack of nourishment due to arterial changes. The muscular coat of the intestines is atrophied and in some cases not a trace of it can be found. The villi and mucous follicles are atrophied and very little mucus is secreted. In lessened power of the muscular coat and resulting impediment to the peristaltic motion, we see in part the cause of constipation and further diminished nutrition of the body in old age.

The dyspepsia from which we observe aged persons suffer is dependent in part upon the prolonged retention of food in the stomach in consequence of imperfect mastication, in part upon the modified state of the gastric juice, but in greater part due to the blunted sensibility of the nerves of the stomach. The diminution of nerve power resulting in lessening of power of the intestinal muscles causes flatulence and also constipation.

Persons who give but little attention to their health in general are apt to concentrate their cares and anxieties on the bowels. They care for these like a nurse cares

for a child and their uncertainty as to the colored pill they shall take at night is a source of constant worry to them and they take great comfort in calling their physician at all times of day or night to make sure of the remedy they should take today.

It would be far better judgment to give consideration to the diet and the care of the skin than to concentrate all their attention on the bowels. It would be better to have a bowel evacuation every two or three days than to have the mental condition some aged persons have as a result of their excessive attention to the bowels.

Persons who use any means available to have a diurnal motion of some sort usually suffer more from the purgative than the constipation and when the habit is changed freely admit that they feel better on the days that the bowels do not move than when they take the cathartic. A daily action of the bowels is preferable if it can be obtained without harsh measures. However, in many senile cases we will find from careful study of the patients that a bowel movement every other day is sufficient. Violent straining at stool should be prohibited because it may cause hernia.

A glass of cold water in the morning may help the bowel action and sometimes a cigar will be the means of stimulating peristalsis. I believe the best time for a bowel movement is soon after a meal because the ingestion of food tends to increase peristaltic action.

When the fecal matter becomes hardened in the rectum it is sometimes very difficult to relieve it. The rectum becomes obstructed and the old man dreads a movement on account of the pain and the longer he waits the more the accumulation of hardened substances in the rectum. Sometimes enemata of oil will relieve it, but usually it is necessary to remove the mass with the finger covered by a rubber finger cot or by means of a scoop. As soon as

the obstruction is relieved the bowels will usually be very loose for several movements.

When the aged are ill from any other cause it is sometimes difficult to obtain a bowel movement and enemata must be resorted to. I use for enemata, inspissated ox-gall mixed with oil or use a mixture containing epsom salts, glycerin and olive oil. If the quantity of the enema is not great, there is no danger from its use. It has been said that enemata are dangerous in the aged, but I have never seen any bad results. If the patient is very weak, I use an adult size glycerin suppository inserted into the rectum and repeated every hour until results are obtained.

If the bowels have not moved in several days, I sometimes give five grains of calomel with five grains of sodium bicarbonate and give a saline by mouth the next morning. Occasionally it is necessary to use croton oil.

One of the best tablets I have seen for the aged is the official compound rhubarb tablet containing aloes, myrrh, rhubarb and oil of peppermint. One may be given after each meal or two may be taken at bedtime. Podophyllin in ¼-grain tablets occasionally works well but is very slow in its action.

The use of petroleum or Russian oil is not new. In Floyer's, *Medicina Gerocomica,* printed in London, in 1724, mention was made of the use of oil for lubricating the bowels. Russian oil, no doubt, works well in many cases, but it should not be forgotten that its action is not due to lubrication but it acts as a foreign substance in the intestines that nature must eliminate. In this respect it does not differ from any other cathartic that depends upon its mechanical action.

The food we ordinarily eat, the nourishment that enables us to do our work, almost every diet list prescribed in the treatment of disease, tend to produce constipa-

tion and the only way to overcome it is by taking a remedy to relieve it.

It is by far better to take a pill every night than to suffer from toxemia as a result of faulty elimination. Persons who will not take pills for the bowels because they fear they will always have to take them may die from toxemia. Tablets do no harm when well selected and if they lose their effect we must change to another kind. Later by returning to the first remedy employed the results are again satisfactory.

The compound cathartic pills, or a tablet containing aloin, strychnine, emetine and podophyllin may work well. Cascara sagrada is an excellent remedy for senile constipation and these old persons can take it for a long time before being obliged to increase the dose.

Bile salts are also satisfactory in many cases. Owing to the secondary effects of drugs due to cumulative action it is not safe to use belladonna in combination with other remedies because continued use may produce undesirable secondary effects from the belladonna.

The simpler the remedy the better and the compound rhubarb tablet seems to be very efficacious. The aged will misinform you about the true condition of their bowels by stating that they move every day when perhaps they do not move oftener than once a week. They say they have a pill they take and in this way they can do as they wish in their treatment and sometimes they actually forget when the bowels moved last. When an old person is sick in bed no matter what the cause is, get the bowels open. They may say that they have not eaten anything for several days but this does not matter.

When called to see an old person who is ill and is failing rapidly, when nothing seems to help him and you can see death is not many days hence, when, no matter the disease, your remedies do not have the desired ef-

fect, get the bowels open by an enema and also a laxative by mouth and you will be surprised how many times death will be postponed and the old person will get around again.

A word should be added about the use of saline laxatives. This form of medication is the most effective to rid the body of toxines, but unless the patient is robust their continued use will be too depleting. If they are robust, they can take a saline each morning, a so-called "morning refresher," but if the patient is physically frail, tablets are better for continued use.

The toxines produced during sleep and inactivity, the fact that elimination has stopped during sleep, the kidneys, lungs and bowels are resting from their work, has led me to believe that there are more toxines in the system in the morning on awakening than at any other time of day. This led me to prescribe a saline laxative at bedtime in place of the morning and in most cases the results have been excellent. The saline does not usually disturb the patient during the night and when he awakens in the morning the remedy will have its effect. In this way we have overcome the toxemia by allowing the saline to act while the poison is developing.

The same principle applies to the use of pills at bedtime, but the latter do not have the effect in relieving toxemia that a saline has. Therefore, for toxemia in all cases use salines if they are well borne and pills or tablets if the only requisite is a bowel evacuation and toxemia does not enter into consideration.

CHAPTER XII

TOXEMIA IN THE AGED

CASE I.—A man, aged seventy, consulted me for general weakness which he had experienced for some time. He said that he could not sleep at night, had indigestion, mouth had a bad taste in the morning, vertigo, occasional nausea and constipation.

His family had observed, too, for the past few weeks that his mental condition had changed and that he was in the state commonly called "childish." He was much irritated by music, could not bear the ordinary conversation about the household and in many ways was failing.

The tongue had a thick white coating and there was an odor from his breath, signifying a fermentative condition of his stomach; the temporal arteries were tortuous and the pulse beat visible. If he was in a warm room after lunch he would fall asleep. Moreover, he would nap several times a day and when night came, naturally, he could not sleep. This is very common in the aged, but these old persons get very angry if you suggest it to them for they will not admit that they have been asleep.

He was given two compound rhubarb pills each night and a teaspoonful of the compound solution of sodium phosphate before breakfast. In the course of a few days he was better and his mental condition improved very much.

CASE II.—A woman, aged sixty-eight, complained of neuritis of the left arm. She was very nervous and there were many symptoms of toxemia present. The tongue was white, she had headaches, vertigo, was very

drowsy and was very irritable and depressed. She was given a teaspoonful of milk of magnesia every two hours and occasionally a compound cathartic pill at night and she improved on this treatment.

CASE III.—A man, aged fifty, previously in excellent health, was struck by a motorcycle and received a severe blow on the head. He became unconscious immediately and remained in a coma for several days, finally recoving. While in the coma he seemed to be very toxic.

CASE IV.—A man, aged sixty-seven, was taken suddenly ill with convulsions, and later went into a coma and remained in this condition for several days. When he recovered from the coma he was still somewhat toxic. There apparently was much congestion of the prostate for he could not void without being catheterized. His headaches were violent, but in the course of a month he was out and has since been at work. It is now two years since the attack, and he is working a great deal more than before he was taken ill. Naturally, a diagnosis in this case would be made of uremia or diabetes as the cause of the coma, but repeated and careful examinations have failed at any time to reveal any evidence of abnormality in the urine.

It is possible that purinemia or toxemia from the intestines may be the cause of many cases terminating fatally. For this reason a correct diagnosis is imperative and usually they will recover if proper treatment is promptly given.

I have seen many aged persons who were very inactive and apparently very toxic, who were relieved by exercise. A serious matter is to allow an aged person to be quiet and remain in a warm room. Force these patients to walk in the fresh air and they will usually improve. Inactivity and sleep seem to assist in the formation of toxines. There is said to be a fatigue toxine associated with sleep and as a matter of fact a great part

of all toxines formed accumulate at night because a person is not exercising and the emunctories are not working. It is for this reason that most toxemias are worse in the morning.

It is difficult to ascertain the origin of the toxines in all cases, in the vast majority of cases, however, they are of intestinal or renal origin. Lack of exercise and remaining indoors in a warm room predispose to their development. However, constipation is the usual cause although toxemia may be found in patients who have diarrhea.

Most of the senile diseases seen in a clinic can be traced to constipation. Much depends upon the remedy selected for the intestines, for some remedies may cause free catharsis and yet not rid the system of its poisons.

There are many cases in the aged that are similar to uremia and it is a very difficult matter to differentiate them. Take for example, a specimen of urine from a senile person, which shows casts in the urinary sediment. Symptoms of toxemia from intestinal origin may be attributed to the kidneys when the casts are merely a normal finding in these cases and the kidneys are functionating properly. It is very easy to make a mistake in diagnosis, for a normal urine from a senile case may show albuminuria, casts and leucocytes. Also, indicanuria may not be present in senile cases although there is marked intestinal toxemia.

Diabetes may cause symptoms similar to intestinal toxemia and yet the urine will not show acetone or β-oxybutyric acid. This is a finding peculiar to old age. A urinalysis should be made in all senile cases because failure to find a disease may hasten death.

The aged frequently get toxic from the absorption from an internal tumor. For example, carcinoma of the stomach will produce symptoms similar to intestinal toxemia. There is a peculiar odor of the breath that

almost makes the diagnosis certain the minute you detect this odor.

I saw a famous old man a few days ago and although he is apparently in an excellent condition there are certain signs of toxemia present. The temporal arteries are tortuous and pounding, there is a slight puffiness under the eyes, a slight yellow color of the skin and an odor of the mouth that is noticeable a short distance from him. He gets brain fag easily and can not hear conversation for more than a few minutes without becoming tired.

Brain fag in this instance is said to be due to old age, but in reality it is due to lack of care of the bowels. Even though the bowels may move each day, it is a very simple matter to get toxic and a course of treatment will undoubtedly relieve the toxemia and he will be better able to carry on his work.

Many of the symptoms commonly attributed to senile brain changes are due entirely to toxemia. I recollect an old man who was in a very nervous condition, and it was said that his mind was unsound. He contrived against his family and told his friends that he was abused at home. In fact, when he had a good thing to say about anyone his family thought surely his mind was not normal.

He became ill and was given a course of eliminative treatment and he greatly improved. As his body was rid of the toxines he changed mentally and saw good in everyone and everything. I have observed this in so many cases that I believe that many of the peculiar traits ordinarily associated with them are merely symptoms of toxemia.

The first symptom of toxemia is usually a complaining of weakness. The term they usually use is that "they have no strength." Loss of sleep, loss of appe-

tite and lack of strength are the most common things we hear from the aged and they require careful analysis. As an actual matter of fact they have as much strength as usual but the toxemia produces a feeling of weakness.

To overcome this physicians usually prescribe tonics such as gentian, calisaya or strychnine sulphate, but without any results. There is no tonic that would be of benefit to them without an eliminative treatment. However, it is possible to combine the treatments.

Treatment

A great deal depends upon the condition of the tongue. If the tongue is coated with a white fur, an alkali should be prescribed. If the tongue is red and the papillæ prominent, a mixture of nux vomica and hydrochloric acid is advised.

A saline laxative is the best method of treatment in almost every case. If the patient is physically frail, though, it is well not to continue the use of this saline too long. An aged person, if robust, can take a saline each morning before breakfast. Citrate of magnesia, Seidlitz mixture, compound solution of sodium phosphate, magnesium sulphate or Pluto water may be used.

Salines may be continued as long as necessary if the patient is robust, but if physically frail it is better judgment to use pills or tablets because salines are too depleting. I have used the compound rhubarb tablets a great deal for the aged, usually prescribing one after each meal or two at bedtime. Compound cathartic pills work well and podophyllin tablets ¼ grain may be used occasionally but they are very slow in their action.

If the stools are dark in color and the tongue coated with a thick white or brown fur, I prescribe ¼ grain podophyllin tablets, one to be taken every three hours. If the stools are light in color, I give 1/10 grain of cal-

omel, one tablet to be given every ten minutes until ten are taken, followed by a saline. The podophyllin tablets may be continued indefinitely and they work well in the aged. If the stools are very offensive, I prescribe tablets containing 1/1000 grain bichloride of mercury, one to be taken every three hours.

As a supportive remedy to be taken with the eliminative treatment I give a tonic consisting of tincture of nux vomica and elixir calisaya or tincture gentian compound. As a table water I prescribe Vittel Grande Source or Salee, a pint or quart to be taken daily. Celestins Vichy may be used in its place.

The mineral waters seem to aid in the elimination of toxines and do not deplete the system. It is a geriatric principle that we must stimulate the aged, for nature tends to cure the young, but kill the aged.

I do not usually interfere with the diet. Eggs are usually countermanded, but you will find in my sections on senile diabetes and nephritis that I do not advocate changing the diet of the aged a great deal. The same rules apply, in my opinion, to the diet for toxemia as apply to the diseases mentioned above.

Many theories of the association of longevity and autointoxication have been advanced, but one fact remains certain. Attention to the correction of autointoxication will cause a great deal of comfort to the aged and their families and will prolong life. Several years added to the life in some cases may result, but in time a toxemia of some kind, in most instances due to the kidneys, cancer or pneumonia, will be the cause of death. Much can be done to help the aged live more comfortably and longer and the correction of toxemia will improve the mental condition of many senile patients.

CHAPTER XIII

BLOOD PRESSURE IN SENILE CASES

CASE I.—A man, aged fifty-six, consulted me for vertigo. For some time he had a pressure in the occipital region; experienced sensations of electric shock on lying down and complained of a troublesome buzzing in the ears and was quite deaf. He was very drowsy and mentally depressed. He was the plethoric type of case and his appearance indicated toxemia. He had a position on a railroad and he was approaching the time when he would be forced to give up his work.

Examination showed a systolic pressure of 230 and the diastolic pressure registered 190 on the aneroid apparatus, but the arteries did not show apparent changes of degeneration. The urinary examination revealed the presence of albumin and the sediment showed many hyaline and granular casts.

Nephritis was undoubtedly the cause of the increase in blood pressure and treatment was given in this direction. He was given a half ounce of magnesium sulphate each morning before breakfast and was placed on a milk and cereal diet. I prescribed the dried substance of pig's kidney, given in tablet form, but gave him nothing to directly reduce the blood pressure, such as the nitrites or iodides.

On this regimen he improved and the blood pressure was reduced each week about ten mm. on the aneroid apparatus, until it was 150. He lost about twenty-five pounds in weight and said that he had never felt better in his life. He remained on this strict diet for two

months, gradually adding a few vegetables and fresh fish to the list. Notwithstanding the strict diet and depletion, he said that he felt stronger than he had in several years and was able to work.

The blood pressure increased to 160 and he increased his diet and it remained at this point. The deafness improved, his so-called catarrh of the nose disappeared as did the other symptoms, and on the continued use of the substance of the pig's kidneys and on the diet, the urinary examination showed an improvement but the casts did not entirely disappear.

He moved to another city and I lost sight of him for a time. Later a letter from his physician said that the blood pressure had returned to 210 and a year afterward when I saw him he said that as soon as he discontinued the treatment the former symptoms returned.

Case II.—A woman, aged seventy-two, had a chronic nephritis which caused an edema of the legs and many vague symptoms such as neuralgic pains, cramps in the legs, itching of the skin and a numbness of the legs. Her blood pressure was 180 systolic and 130 diastolic. Under a treatment with salines and a nonnitrogenous diet, the blood pressure became lower and there was an improvement in the general condition.

Case III.—A man, aged sixty, had a chronic nephritis which caused him a great deal of annoyance. His systolic blood pressure registered 220 and the diastolic 190 on the aneroid apparatus. He had purchased a sphygomanometer and he had his valet take his blood pressure every day.

He had periods when he felt better but during this time his pressure was higher than when he was ill. This fact led me to believe that it was one of those cases that would do better without interference. In other words, there was a certain harmony in the action of the internal

organs and as long as this action was not disturbed he maintained a condition which was fairly good and lived in comparative comfort. I advised him to disregard the blood pressure apparatus and apply a little "skillful neglect" to his case.

The fact that his blood pressure was high caused him much worry and mental depression. He lived for two years in this way and traveled about quite extensively a part of the time. He was very careful of the emunctories, did not overeat, but ate the food he liked and used an electric light bath each week to eliminate the toxines through the skin. From the time he stopped treatment, which was directed to lower his blood pressure and lived a life similar to that which he had lived for years, he found he was more comfortable and probably lived as long as if he had resorted to more drastic measures.

The term blood pressure is misused frequently and we make a mistake in thinking it is a disease while it is merely a symptom of some other condition. There are many causes of an increase in blood pressure, but in the main it is due to an increased peripheral resistance due to the increased work the heart has to force the blood through the congested organs.

Arteriosclerosis does not in itself always produce high blood pressure. If there is cardiac hypertrophy there may be an increase in the pressure, but if there is no hypertrophy there will be a low blood pressure due to the increased tonicity of the vessels. This is particularly true in interstitial nephritis where it is common to find an advanced case which has a pressure of 100 on the aneroid apparatus while in the parenchymatous form of nephritis there is usually a marked increase in the pressure, probably due to the enlarged kidney being also congested causing the heart to work harder to force the blood through it. In the interstitial or contracted kidney there is not always a congestion and accompany-

ing increase in the peripheral resistance. This does not always work out in this way for in some cases the contracted kidney will cause a blood pressure higher than the enlarged kidney. The difficulty encountered in diagnosing a high blood pressure by the appearance and physique of the patient alone without a sphygomanometer is well illustrated by the following cases:

Case IV.—A woman, aged sixty-five, came into my office complaining of headaches and dizziness. She did not have many other symptoms and from the fact that she was physically frail, weighing about 110, it was naturally thought that a woman of this physique would not have a high blood pressure, especially as she did not have any symptoms. I saw her in my office on several different days, but she did not appear very sick. I did not take her blood pressure, but prescribed for her symptomatically. She was taken suddenly ill with an attack similar to asthma and in my routine examination at the bedside was astonished to find the blood pressure registered 240 systolic and 200 diastolic on a Tycos aneroid apparatus. I was alarmed to find a large quantity of albumin on urinary examination and also blood and casts in the microscopic examination. She died the next day from cerebral hemorrhage hardly giving any apparent warning of the seriousness of the affection until twenty-four hours before her death.

Case V.—A man, aged sixty-eight, robust and of the plethoric type, weight 210, came to my office presenting the classical symptoms of a high blood pressure and nephritis. The pulse was full and could be rolled under the fingers and the temporal arteries were tortuous and the pulsation was visible. To make a snap diagnosis almost every physician would say high blood pressure, but examination repeated on different days with a Tycos

and a Sanborn apparatus showed that the systolic pressure was 120 and the diastolic was 90.

These two cases illustrate the impossibility of depending upon the appearance of the patient. It is very common to find cases of intestinal nephritis that are accompanied by a low blood pressure. There are several factors which enter into the production of high blood pressure. For example, thyroid disease may cause it and another factor which must be given consideration is the viscosity or density of the blood itself. In such diseases as anemia, tuberculosis and marasmus, the blood is thin and the specific gravity low with resulting low blood pressure. Nephritis and some other diseases produce a higher specific gravity and if this is high the blood passes through the arterioles and capillaries with resulting increase in peripheral resistance. All those factors tend to raise the blood pressure in the aged and a natural outcome of advancing years is to have a higher pressure.

We must know the normal limits and not mistake the pathologic senile pressure for a normal condition. The causes which produce a high blood pressure which is pathologic, are plumbism, alcoholism, nephritis, chronic toxemia, gout, diabetes, syphilis, and thyroid degeneration. These are outside of the normal senile state in which the high blood pressure is a part of the senile change.

Many physicians have made rules to give normal blood pressure reading for old age. An approximate rule is to add 100 to the age, but we may add, in some cases, still more and yet be within normal limits. It may also be much lower and yet be normal. The fact is we are all a rule for ourselves and each one has an individual blood pressure which is normal to himself. I have seen men at seventy who had a systolic pressure of 200 and after

careful study I was convinced that it was normal for these persons. I have even seen it higher and yet the patient would apparently be in comfort and to meddle with cases of this kind would bring disastrous results. A man at ninety would ordinarily have a normal systolic pressure of 190 or more. The pressure also varies from day to day and from month to month and undoubtedly minor things enter into the cause of this variation. Food, exercise, rest and elimination probably effect it. If the old person has symptoms referable to the high blood pressure, he should be treated, but if one is too ambitious and simply treats the increase in blood pressure, bad results may follow.

Trosseau said that half the knowledge of medicine was to know the natural course of disease. This applies to old age because we can not differentiate the normal from pathologic conditions if we do not know normal senile changes. Too much stress has been laid upon high blood pressure in old age. Within certain limits high blood pressure is normal and meddling with the process by treatment may cause fatal results. Nature has given an increase in pressure for some reason and is annoyed if we attempt to cure the condition to make it comparable to a man twenty years younger.

It is very difficult in old age to get an accurate reading because of the differences between the sclerosed arteries of each arm which necessitates taking the pressure on each arm owing to this difference. I use the Tycos and also Sanborn instruments and do not depend upon the radial arteries or the wrist. Auscultation will assist in obtaining an accurate reading, but it may be well to take it on different days and when it is taken in different ways an average can be made. Occasionally, the radial arteries will be so sclerosed that it will be an impossibility to take it even by the auscultatory method. The artery also may be misplaced.

The factors which enter into blood pressure are cardiac hypertrophy, arterial tension, peripheral resistance and the specific gravity of the blood. Chronic nephritis causes this increase in resistance and in time cardiac hypertrophy develops. The best cardiac stimulant sometimes is to reduce the amount of the heart's work by reducing the capillary resistance. It is comparable to a horse who has a heavy load on the wagon and has become exhausted. The best stimulant is not to whip the horse, but to remove a part of his load and he is able to go on with his work.

High blood pressure except when due to other specific cause is almost invariably caused by this increase in resistance. To treat it by the nitrates would not relieve the congestion which is the cause of the condition.

Diastolic pressure in old age varies, but there are some cases in which there is a marked difference from maturity. Myocarditis, gout, carcinoma, or debility caused by various diseases, causes a low diastolic pressure. On the other hand, high diastolic pressure may be due to heart disease and nephritis. Aortic regurgitation may cause a low diastolic pressure. In nephritis, the diastolic pressure is usually high and up to a certain point in cardiac hypertrophy there is a high diastolic pressure, but later the pressure falls when the degree of hypertrophy has reached its maximum.

The following tables taken from the monograph of L. M. Bowes (*The Journal of Laboratory and Clinical Medicine,* January, 1917), give his experiments on the systolic and diastolic pressure in old age:

Table I

The Average Blood Pressure of Both Men and Women

AGE	NUMBER EXAMINED	SYSTOLIC PRESSURE	DIASTOLIC PRESSURE	PULSE PRESSURE
65-69	32	151	82	65
70-74	39	160	86	73
75-79	38	166	86	79
80-84	27	175	84	83
85-89	7	170	90	77
90-94	7	142	81	61

Table II

The Average Blood Pressure of the Women

AGE	NUMBER EXAMINED	SYSTOLIC PRESSURE	DIASTOLIC PRESSURE	PULSE PRESSURE
65-69	21	154	83	71
70-74	29	158	83	72
75-79	24	170	88	81
80-84	16	183	85	91
85-89	7	170	90	77
90-94	3	137	80	53

Table III

The Average Blood Pressure of the Men

AGE	NUMBER EXAMINED	SYSTOLIC PRESSURE	DIASTOLIC PRESSURE	PULSE PRESSURE
65-69	11	145	81	63
70-74	10	166	91	75
75-79	14	159	89	77
80-84	11	163	84	80
85-89	0	—	—	—
90-94	4	145	81	65

My clinical experience in old age does not bear out Dr. Bowes' table in detail and I have found in private practice that it ranges higher than he has found it. Bowes' conclusions, taken from the same journal, are well worth reading. They are as follows:

Conclusions

1. Only repeated readings of both systolic and diastolic pressure are of value, and both arms should be used for observations in old people.

2. Inequality of the pressures of the two sides is frequent in arteriosclerosis.

3. There may be a high or low blood pressure in arteriosclerosis; the pressure falling with involvement of the heart muscle in the process of fibrosis resulting in chronic myocarditis.

4. High systolic pressure associated with high diastolic pressure indicates cerebral hemorrhage or nephritis.

5. A sustained hypertension, both of systolic and diastolic pressures, indicates cerebral hemorrhage, while hypotension indicates cerebral embolism.

6. A sustained high systolic with a low diastolic pressure usually indicates cardiac trouble. A low diastolic pressure is common with aortic regurgitation.

7. A high pulse pressure is frequent in arteriosclerosis and aortic regurgitation; and a sustained high pulse pressure usually results in a failing heart.

8. A systolic pressure of 100 may not keep a man from his daily business.

9. A lowering blood pressure indicates a failing heart.

10. Acute enteritis lowers the blood pressure.

In my opinion a great many cases of increased blood pressure are caused by nephritis and attention to the kidneys will give better results than any other way. We may find cases where the nitrites are beneficial and if specific disease is present the iodides should be administered. The latter remedy is very irritating to the stomach and kidneys and should not be used except when necessary. The treatment I give in the chapter on senile nephritis is, in my opinion, excellent for most cases if there is an increase in blood pressure.

The term high blood pressure has become a fad today as has the term "hardening of the arteries." If we do not forget that these conditions are not diseases, but merely symptoms of some other disease, we will be better equipped to treat the condition in a more intelligent manner.

The greatest difficulty in geriatrics is to be able to diagnose the difference between normal and pathologic senile degenerations. Until we recognize this fact we will be making serious mistakes in the therapeutics of senile cases.

CHAPTER XIV

ARTERIOSCLEROSIS

Case I.—A man, aged forty-eight, had a marked fibrosis of the arteries, cardiac hypertrophy and interstitial nephritis. His blood pressure, registered on the aneroid apparatus, was 210 mm. systolic and 180 diastolic.

He was very nervous and irritable, had a sensation of pressure in the occipital region, blurring of vision and extreme mental depression. In every way it was apparent that he had a degenerative condition consistent with a man aged seventy-five. There was no history of syphilis, rheumatism, gout or plumbism, but the interstitial nephritis had developed since he had scarlet fever several years ago.

Case II.—A man, aged thirty, had marked calcification of all the arteries. He had chronic tuberculosis of both lungs with cavity formation on the right side. Two months before he died he developed a carcinoma of the tongue which was spreading rapidly until an attack of asthma due to the tuberculous condition, brought an end to his suffering.

Case III.—A man, aged seventy, had a marked arteriosclerosis. He complained of headaches, loss of memory, nervousness, blurred vision, and other symptoms commonly described as classical arteriosclerosis. His symptoms were due, however, to a parenchymatous nephritis.

Case I describes a man of forty-eight who appears in every way like a man of seventy-five. In other words he has premature old age. Case II is very unusual and represents a type in which it is difficult to ascertain the

Fig. 4. Roentgenogram showing marked arteriosclerosis and calcareous degenaration of the ulnar artery in a man, aged 68.

Fig. 5. Same patient as in Fig. 4, anteroposterior view, also showing rarefaction of the ends of the radius.

cause of the arteriosclerosis. Case III is not unusual for a man of seventy, for he would normally have hardening of the arteries.

The changes in the arteries accompanying advanced years make arteriosclerosis a normal process in a man past sixty and in some cases a little earlier. As the years advance the size of the heart and the thickness of its walls usually diminish; occasionally, we find that the heart is enlarged owing to the resistance imposed upon it by congested vessels in the internal organs. The lining membrane has spots of atheromatous deposits and the free margins of the valves are thickened and hardened. The arteries themselves contain deposits of lime salts and fatty matter which deprive them of their proper elasticity and convert them into mere rigid tubes. The walls of the capillaries are thickened, making the diameter smaller. The pale skin of old age contrasted with the ruddy bloom of youth illustrates the fact that the narrowing of the lumen of the arteries causes a lack of nourishment of the parts with consequent atrophy and degeneration.

The diminished capillaries impede the free passage of the blood from the arteries to the veins and the propelling force of the heart and arteries being deadened, the fluid accumulates in the veins which as a result become distended and tortuous.

Because of the congestion of the internal organs, in particular the kidneys and liver, and because of this derangement of the natural balance of the blood, the heart is forced to carry on additional work. If the heart is strong, the circulation may be kept up with perhaps no greater deviation from health than piles or varicose veins. If the heart action is too strong, it may cause rupture of the vessels by the impulse and apoplexy may be the result. If the heart is weak there will be a resulting

venous congestion, dropsical effusions and a general subcutaneous edema.

The sclerosed condition of the radial arteries makes it uncertain to depend upon the pulse at the wrist. Always count the heart rate at the apex. It has been thought that as years advanced the pulse rate became less. This is not true, unless we are dealing with myocarditis. I recollect a man, aged eighty, who had a pulse rate of twenty per minute. This was due to myocarditis. It has been found that the average pulse rate past seventy years of age is about seventy-eight. A pulse rate of 120 in the aged is serious. However, sometimes with the aged the faster the pulse and the higher the fever the better the prognosis. My opinion is based upon the fact that normally the aged do not have a fever and increased pulse rate and when they do present it there is a possibility that it denotes vitality but this is not always true.

Premature arteriosclerosis aside from the usual pathologic causes, as syphilis, rheumatism, gout and plumbism, usually develops from a definite condition. From lack of care of the bowels or from indiscretions in diet the portal circulation becomes a little congested and secondarily there is a congestion of the kidneys. This damming of the blood around the portal and renal circulation forces the heart to pump a little harder to get the blood through the increased resistance. As a result, if the process is continued, the second aortic sound becomes accentuated and the systolic blood pressure becomes a trifle increased. If this condition continues the heart becomes increased in size in order that it may carry on the extra work and if the condition continues for a few years the kidneys, in contrast to the heart, become decreased in size which causes them to fail in their ability to perform their functions. The renal insufficiency comes as interstitial ne-

Fig. 6. Roentgenogram of ankle of a man, aged 67, showing calcareous degeneration of the posterior tibial artery.

phritis develops and in place of functional insufficiency true uremia is present.

The heart now has quite a degree of enlargement, there is high blood pressure in the arteries whose walls have undergone sclerosis and in time, calcareous degeneration takes place in the arteries.

We see here the role the kidneys play in the production of arteriosclerosis and if I were to say the most frequent and constant cause of arteriosclerosis I would say by all means the kidneys. I believe that the arterial changes are in most cases secondary to the renal changes. In the first place, arteriosclerosis, except in rare cases, is not a disease but a symptom of some other disease. Today we are attributing many things to arteriosclerosis and calcareous degeneration of the arteries and we do not stop to consider that arteriosclerosis is a normal process of ageing and is compatible with good health.

The symptoms said to be due to arteriosclerosis are usually due to nephritis and if we analyze the matter as the French physicians do we will find that the nephritis was the first disease to appear.

After sixty years of age we normally develop this hardening of the arteries and it should not be considered pathologic unless it develops in young persons. Nature has produced these arterial changes for a reason and permits a function which is in harmony with the degeneration of other organs. Today, when a person of advancing years is ill with various symptoms the physician is ready to attribute them to arteriosclerosis and when the old man dies it is said that hardening of the arteries produced it.

I wish to repeat that arteriosclerosis and fibrosis of the arteries is a normal process of advancing years and should not be tampered with. The symptoms we commonly attribute to arteriosclerosis are due usually to renal insufficiency. There are many cases, unquestion-

ably, where arteriosclerosis is pathologic and should be treated as such especially when it occurs in younger individuals and has a definite cause.

This pathologic arteriosclerosis should not be confused with the process due to normal senile arterial degeneration. The term atheroma is not synonymous with arteriosclerosis since it is a fatty degeneration and is localized. A syphilitic aneurism is in reality not a sclerosis of the aorta but an actual softening and not hardening of the vessel. Fibrosis and calcification may be due to syphilis but usually the change is due to a gummatous softening. At the beginning of arterial degenerations there is a softening of the arteries before fibrosis and calcification take place. Therefore, we may feel an artery at the wrist and because it is soft say that it is normal when in reality it is the incipiency of an arterial fibrosis.

While arteriosclerosis is a normal change there are certain factors which hasten its development. In middle age, syphilis, infectious diseases, rheumatism, gout and plumbism may tend to cause premature arterial changes. It is my opinion, however, outside of syphilis and nephritis and from the fact that rheumatism and gout in many instances are due to a chronic uremia, the arteries are little effected by other agents. Roentgenologists are unquestionably prone to have premature arteriosclerosis and thyroid disease may also effect it.

I am convinced that the term cerebral arteriosclerosis is used to cover a mass of ignorance in diagnosis. I have seen many of these cases with symptoms of a classical cerebral arteriosclerosis which are due to uremia and intestinal toxemia. The elimination of toxines by means of free catharsis will relieve many of the symptoms due to so-called arteriosclerosis of the vessels of the brain.

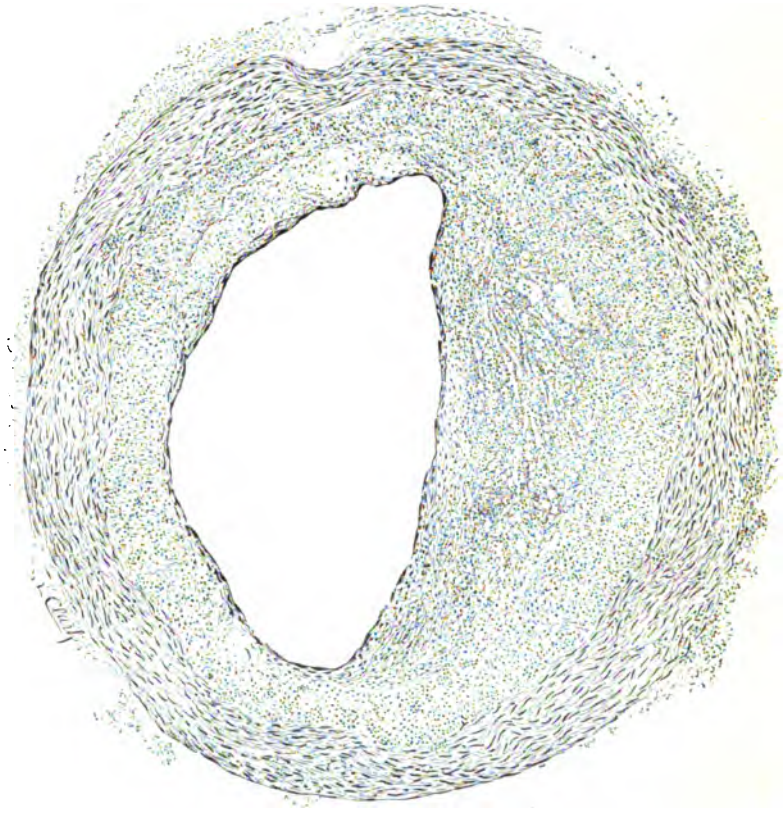

Fig. 7. Left coronary artery. Advanced arteriosclerosis, from a case of fatal angina pectoris. Magnified 30 diameters. But little of the adventitia is shown. The media is thinned and at points encroached upon, but the most conspicuous change is in the intima, beneath the endothelial layer of which there has been extensive proliferation and leucocytic accumulation, most marked in the upper segment, greatly altering the lumen of the vessel, lessening its carrying capacity, and rendering it practically inelastic. There was a marked fibroid myocarditis in the area supplied by the vessel. (From Hare—*Practice of Medicine.*)

Aged persons are apt to get toxic especially when inactive and failure to discover this will cause us to attribute vague symptoms to arterial changes which are not due to them at all. The term arteriosclerosis is a refuge for a physician who is not able to make a diagnosis and it is almost as criminal as to call a disease "old age." I am speaking now of old persons past sixty who have arteriosclerosis and we use this term because we are not interested enough in the old man to discover the cause of the symptoms. These persons of advanced years who have arteriosclerosis present a series of symptoms which are almost classical. They have headaches, dizziness, loss of appetite, furred tongue, blurred vision, drowsiness to the extent of dozing in their chairs, weakness, symptoms of neurasthenia and psychasthenia. There is a change in the mental condition. They become irritable, can not stand the sound of conversation and music and become very melancholic.

A woman, aged seventy, was taken suddenly ill with the loss of use of her left arm. The next day she had regained its use.

A man, aged seventy-two, was taken with sudden lameness and loss of power in the right leg and was obliged to be taken home. The next day he had improved.

A man, aged sixty-five, suddenly became maniacal and said that I was poisoning him with medicine. The family thought the mania was due to some drug that I was administering. In three or four days he had improved. About six months later he died of cerebral hemorrhage.

A woman, aged seventy, was taken ill suddenly with loss of speech and mental confusion. She was very ill for several days, but recovered. It is now two years since the attack and she is in excellent health, is able to travel, but has never regained her speech and can not read or write since she had the attack. She can say

three or four words and her daughter can understand some things she wishes. At times she becomes toxic, but free elimination through the emunctories usually relieves her in a few days.

This is a typical case due to cerebral arteriosclerosis but undoubtedly the attack was caused by cerebral congestion due to renal toxemia.

A man, aged sixty-two, was taken ill with symptoms similar to cerebral hemorrhage. The legs were powerless, he was unconscious for three days and was in a deep coma. A treatment by hot packs and enemata improved the condition, and he lived in comparative comfort for a year.

A man, aged seventy-five, had attacks of mania which usually came when least expected. He was given free elimination and in a few days he had improved. This man has been an inspector of post-office construction and between the attacks maintains a normal mental state and is very keen in his judgment.

These cases described are in old persons who have marked arteriosclerosis and the symptoms given could easily be attributed to this condition. It is very evident in these cases that the symptoms, while due to cerebral arteriosclerosis, were produced by a cerebral congestion due to renal or intestinal toxemia. Many of these cases of cerebral arterial hardening never produce symptoms until there is a systemic toxemia which causes a congestion.

This applies to apoplexy. In the aged, a sudden loss of the use of a limb, an unconscious condition combined with paralysis is commonly termed a "shock" or "slight shock." The layman is very apt to call any unconscious condition in the aged a "shock" and physicians are very apt to label these conditions apoplexy.

The more I study the intoxications in the aged the more I am convinced that true apoplexy is not as com-

mon as supposed and if these cases are analyzed we will find uremia or intestinal toxemia the cause. This has been proved several times where active treatment of the toxemia has been instituted and the old man has recovered and returned to his work with his usual vigor. This type of case could not be called apoplexy. Uremia may be localized in one organ. Thus we may have renal uremia, gastric uremia and cerebral uremia. Cerebral uremia is very similar in its manifestations to apoplexy and it is often difficult to clear the diagnosis. On an eliminative treatment usually the condition will improve if due to uremia.

It is a mistake in therapeutics to attempt to cure senile arteriosclerosis. The iodides are unnecessary and may cause harm to the stomach. Moreover, the iodides are very irritating to the kidneys. I have seen better results in the treatment of symptoms from free elimination through the kidneys, bowels and skin than by employing the nitrites. I fail to see any great advantage in lowering the blood pressure by the nitrites, that is for continued use, unless attention is given to the underlying cause.

Free catharsis by a saline, as potassium bitartrate to increase elimination through the kidneys and if the patient is in coma a hot pack or enema will be of benefit. Hot packs are dangerous to the aged and should be used only when there is coma. The skin does not respond readily to the heat and it is difficult to start perspiration. It is of benefit, however, in some cases.

In summarizing, I would say, relieve the system of its toxines, restrict the diet, and disregard the arteriosclerosis as far as therapeutics is concerned, unless in a younger person where there is a clear indication for a specific remedy.

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CHAPTER XV

SENILE NEPHRITIS

CASE I.—A man, aged seventy, lost his position in a factory, and as a result became despondent and began to drink quite an amount of liquor. He gradually developed a weakness, complained of headaches, dizziness, loss of appetite, and had difficulty in urination. He cried often, and the sound of music and laughter caused a very annoying pain in his head. He contrived against his family, saying that he was badly treated and would not eat at home. On the contrary, he would go to a restaurant to give the impression that he was not treated well by his family.

One night his family heard a noise in his room, and it was discovered that the old man had fallen on the floor and was having a convulsion. He was given ether, but during the course of the morning he had several severe attacks. He was unconscious; the right side of his face was drawn and the left arm and leg were paralyzed. There was a general subcutaneous edema. A diagnosis of uremia was made and he was given hot packs. For four days he remained unconscious, but in the course of a few days he regained consciousness, and by free elimination through the emunctories, the use of the arm and leg gradually returned. It was necessary to catheterize him for several days, but this was finally overcome. In about a month he was able to get out of doors, and he gradually improved in other ways. It is now three years since the attack, and the old man is able to do a hard day's work and is in better health than he has been for years.

CASE II.—A woman, aged seventy-three, was extremely nervous. She appeared like a child with St. Vitus' dance. The urine showed the presence of blood and granular casts. By the use of the extract of the kidney of a pig, she gradually improved.

CASE III.—A man, aged sixty, of the physically frail type, consulted me for dizziness and indigestion. The cause was interstitial nephritis, and he had had several severe attacks. In this type of nephritis a person may be very sick, but not show it in his general appearance. The presence of blood, granular casts and blood scattered in some of the casts gave a guarded prognosis. He was given the dried extract of pigs' kidney and improved on its use.

CASE IV.—A man, aged seventy-four, was taken ill with heart weakness. He then developed facial paralysis and persistent hiccough. The urine showed many hyaline casts, but there were no other symptoms of nephritis. I ordered free catharsis and absolutely starved him for two weeks. He was not given a drop of water or anything else. This relieved the persistent hiccough. He was in a condition where the kidneys were not able to do any work, and the presence of hiccough and vomiting indicated that Nature did not require any nourishment.

The old man apparently gained on this treatment, and instead of the starvation producing weakness, it seemed to make him feel better. When the irritability of the stomach ceased he was given champagne and also peptonized milk. He gradually gained, and today is working with a great deal of comfort.

CASE V.—I once saw an invalid woman who had tried many different treatments. She could not move without experiencing faintness. She had taken treatments for

her heart, but was in a condition where she could not move out of bed. The aortic second sound was accentuated and the heart was overworked. On careful questioning, it was revealed that she had the minor symptoms of Brightism, such as cramps in the calves of the legs, itching of the skin, nocturnal micturition, sensation of electric shock on lying down, sensitiveness to cold, dead fingers and dead legs.

The urine showed quite a number of granular casts. Undoubtedly the heart was working hard to force the blood through the congested kidneys. The use of the extract of pig's kidney, together with free elimination, produced excellent results. She soon was able to attend the theatre; in the course of time traveled quite a distance, and during the winter she has been in Florida enjoying good health.

Case VI.—A retired business man, aged sixty-eight, consulted me for difficulty in urination. He said that he had lost his "grip," and appeared despondent and childish. He was melancholic, and his family annoyed him very much. He complained that they did not want him and abused him. His condition was entirely due to chronic uremia, and on eliminative treatment he improved. As a result of the elimination of toxines his mental depression entirely disappeared.

Case VII.—A man, aged sixty-three, has been under my care for five years for chronic interstitial nephritis. The urine showed casts and albumin. For the past year he has apparently been well, and by the use of the dried powder extracted from the kidney of a pig the urine has become free from any discoverable abnormality. Although he has been in excellent health he has recently been developing a blindnss in the right eye, and now he is totally blind in this eye, due to retinal hemorrhage.

The hemorrhage is undoubtedly due to the old nephritis, although the urine does not show any abnormality in the sediment at present.

These cases represent typical examples of chronic renal toxemia. It will be noted that in some of these cases the mental state, often ascribed to "old age," or childishness, etc., clears by the proper attention to the elimination of toxines. An intestinal toxemia will often be the starting of a nephritis or it may develop in the course of nephritis.

The kidneys, under the modern way of living, perform the greater part of the daily elimination. These small organs are constantly working, day and night, and the majority of people neglect to make the bowels and skin do their share of the elimination of waste. As a result of our overeating, the intake of excessive amounts of nitrogenous foods and irritating, volatile substances like mustard, sauces, horse-radish, etc., the kidneys are not only irritated but overworked.

Naturally, the result is that they are the first organs to show any weakness, and instead of enlarging to carry on their extra work, they usually become smaller or contracted. The next course is that the heart is forced to pump harder to get the blood through the congested organs, owing to this increased resistance in the renal blood vessels. This condition continues, and, consequently, produces first a hypertension; next, a hardening of the arteries, and finally hypertrophy of the heart.

Because of the lack of more precise methods of diagnosis, the presence of chronic interstitial nephritis, in many cases, is only discovered on postmortem examination. The microscope and chemical tests will not always show the evidence. Sometimes when the kidneys are in bad condition the microscope will not reveal it until several examinations have been made.

I once saw a case of nephritis due to syphilis,[1] and the diagnosis was made from the clinical aspect because the urine did not show any evidence of abnormality until three weeks after the onset of the attack. Also in Case VII the retinitis developed when the urine was apparently free from abnormality and with the systolic blood pressure at 150 on the aneroid apparatus.

The more we become civilized the more apt are we to have diseases as nephritis and cancer. Inhabitants in the Far East, who live on farinaceous and vegetable foods, rarely have these diseases. The lay press often attributes death to "hardening of the arteries," "heart failure" and acute indigestion. The vast majority of these cases are due to chronic Bright's disease. Arteriosclerosis is merely a symptom and not a disease. In fact, it is a normal process of advancing years.

Symptomatology

Chronic nephritis in the aged differs from that of younger individuals. The ordinary symptoms, like headaches and edema, are usually absent. There is a certain amount of kidney degeneration that is normal in the process of ageing, and this degeneration attacks all organs, and one of the miracles of nature is the function which these diseased organs will assume. If the harmony is broken, however, some organ like the kidney will break down more rapidly than the others. It is then that the symptoms of broken renal compensation arise just as the compensation is lost in the case of heart disease.

The first symptom of nephritis will often be a languid feeling. There is mental depression and a general evidence of an intoxication. The face is flushed at night,

1 "American Journal of Clinical Medicine," August, 1916, p. 676.

the tongue coated and the odor of the breath noticeable. The temporal artery is tortuous and pulsation visible, and the radial pulse is full and bounding. The patient complains of cramps in the calves of the legs, dead fingers, cold legs, shortness of breath and a drowsiness. The old man sleeps in his chair during the day and complains that he can not sleep at night. He contrives against his best friends and tells others that he is abused at home. He loses his sense of cleanliness, will not bathe himself properly, and will resort to habits that are very unclean and unlike his former self.

In the male usually there is difficulty in urination, due to prostatic congestion. Senile rheumatism is very frequently a manifestation of senile nephritis, and is due to the renal toxemia. Sciatica and lumbago are sometimes symptoms, and oftentimes chronic indigestion is caused by the nephritis.

Diagnosis

The presence of casts, albumin and blood, together with the minor symptoms of Brightism, will clear the diagnosis. The symptoms of toxemia must be traced to ascertain if the condition is dependent upon some other disease. I have seen several cases of pyelitis in the aged that were secondary to cancer of the colon. The pyelitis may cause symptoms of Brightism, but in these cases the possibility of cancer of the colon must be eliminated.

Occasionally, I have seen the nephritis accompanying prostatic hypertrophy, both of which were due to syphilis. At times senile diabetes will be accompanied by nephritis, and it is only by a study of the minor symptoms that one can detect the disease which is the most important from a therapeutic standpoint.

In comatose patients it is impossible to make a diagnosis of nephritis, because any patient in a coma, no

matter the cause, will usually have glycosuria, albuminuria and casts.

Prognosis

A little care and attention to these senile patients will produce excellent results in many cases, add much to their comfort and in many instances add several years to their lives. The presence of blood in the urine should give a guarded prognosis. These cases of interstitial nephritis which have blood casts will suddenly be taken ill with every symptom and run a course similar to pneumonia. They rarely recover. I have seen many cases of apparent senile pneumonia which I am sure were an acute exacerbation of a chronic nephritis. This is my conclusion, because in these individual cases I have followed them for several years and knew that they had chronic nephritis.

Whenever sugar is found, together with casts and blood, convalescence is certain to be protracted. Also where the urine does not turn red with Fehling's solution, but a muddy green color, the recovery, as a rule, will be very slow.

Treatment

The issuance of a strict diet list to an aged individual is usually a very distressing and disagreeable punishment. Most of these old persons were accustomed to coarse food in their younger days, and to change their mode of living would bring disastrous results.

Although these aged persons live on coarse food, such as pork, red meats, food rich in nitrogen, I usually give them the liberty to eat anything they wish. When an old man loses his appetite he is very much discouraged. He was taught in his younger days that "food gives strength," and to lose his appetite he thinks means approaching death. If a diet list is ordered for him, it

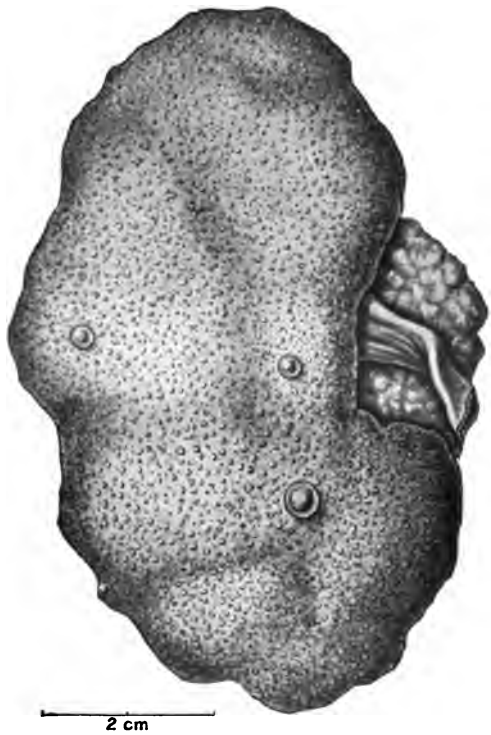

Fig. 8. Kidney of chronic interstitial nephritis. The surface is granular and irregular, and contains numerous cysts. The contraction is quite marked, the organ being but little more than half the normal size. (From Hare—*Practice of Medicine.*)

will usually cause, by mental depression, a loss of appetite. Moreover, most of these diets are constipating.

The best results I have seen in these cases are from nonrestriction in any way. However, this does not refer to acute nephritis, when there is blood in the urine. If these patients are not ill in bed, it is better to keep them on milk, cereals and the light vegetables. If acutely ill and in bed, the absolute milk diet is indispensable. In some cases, as in Case IV, absolute starvation is the only treatment. This is because the kidneys are exhausted and not able to take care of any food or liquid.

Free catharsis is essential, by means of a saline each morning if the patient is corpulent, and a pill like the compound cathartic for one who is physically frail. Salines are too depleting for thin individuals.

Those cases due to syphilis will usually yield to ordinary treatment, and seldom have I been obliged to resort to mercury or potassium iodide for this particular condition in the aged. Some of the best results in a few selected cases of syphilis will be from remedies other than mercury or the iodides.

I prescribe an extract of the kidney of a pig, said to contain the unchanged elements and enzymes of the cells and cortex and convoluted tubules of the kidney. These are in tablet form, and usually from six to twenty tablets are given daily. They give good results clinically and seem to check the process of degeneration.

In some instances, especially in corpulent patients and also where much headache is experienced, cabinet baths, either with an ordinary bath cabinet or electric light bath, will sometimes give good results. The skin of an aged person is usually dry, and it is difficult to start perspiration. To give the cabinet baths to aged patients requires great caution, and the physician must select his cases.

The elixir of iron, quinine and strychnine phosphates, now unofficial, will usually work well as a tonic after the eliminative treatment. However, the return of strength will be automatic as the toxins are eliminated. It is necessary, however, in the aged to increase stimulation, and for this strychnine is indicated.

The matter of changing an old man's habits is important and should be carefully studied. I do not change his mode of living in any way, even allowing him the usual amount of liquors that he is in the habit of taking. A habit which has been for years the pleasure of an old man should not be tampered with.

In Case I it will be remembered that the sickness developed after the old man had left his position. This is an important matter, and the best treatment for these aged persons, when possible, is to keep them out of bed and get them to work. Even in serious illness I feel that on several occasions I have seen aged people saved by getting them out of bed, no matter how sick they were. Even with senile pneumonia or senile bronchitis, if at all possible, they should be kept in a chair and not in a bed. Keep old persons in bed, and the chances are that they will not get up again. It gives them added courage to get them out of bed. The bed to them means "old age," which, in turn, means approaching death. If you tell your aged patients that they will get better, they will not believe you, but if they see that you insist on getting them out of bed they feel that they will get better.

This treatment of nephritis by means of elimination, therapeutic agents, and finally giving them work, is the means of removing many of the symptoms that will ordinarily be attributed to old age and childishness. The toxines in many instances produce the so-called senile mental state.

CHAPTER XVI

SENILE DIABETES

CASE I.—A mariner, aged seventy-six, had complained of a general weakness and as glycosuria had been discovered he had taken the Allen treatment for diabetes. When he came under my care he was extremely weak and the matter that gave him the most concern was his loss of appetite. He said that his diet list had forbidden everything that he cared to eat. The fact that he had diabetes caused him much anxiety. I advised him to resume his usual mode of living and eat anything he wished. He was given a teaspoonful of the elixir of iron, quinine and strychnine phosphates, before meals.

In the course of a few days the results were very evident and the patient said that he felt as well as ever, and in a month's time the sugar had entirely disappeared from the urine. This case represents a transient glycosuria and probably was only a symptom of a general degenerative change.

CASE II.—A man, aged sixty-five, consulted me for polyuria and lumbago. He had diagnosed his own disease because a similar condition of his wife had made him familiar with diabetes. He told me, above all things, that if I found sugar he would not change his mode of living for he felt that he was too old to give up habits that had for years been his custom. I found 2 per cent sugar, but did not advise treatment, and today, four years after the first consultation, he is able to work as well as usual and lives in comfort. In all probability to change his diet, which consists of the coarsest food,

would produce bad results. In fact, treatment does not seem necessary because the rigid diet would be more distressing to him than the few symptoms of which he complains.

Case III.—A man, aged sixty-three, complained of loss of flesh and inaptitude for work. He had not been feeling well for a long time, but the symptoms seemed to him indefinite. Occasionally he complained of backache; he also had gingivitis, blurred vision, loosening and falling out of the teeth and a persistent balanitis.

The urine contained albumin, 1 per cent sugar, many granular casts and some blood. It was apparent that the nephritis complicated diabetes; in fact, the symptoms spoken of were due to diabetes and not to nephritis.

I gave him a mixture containing two grains of pancreatin and sixteen grains of potassium carbonate to the ounce, a teaspoonful of this four times a day, but did not change his diet. I allowed him anything he wished to eat, which was coarse food, for he had always been a hard laborer. For the past two years he has been in good condition and is able to work as usual.

It is interesting to note in this case that this patient's wife had been a diabetic for years. The man described in Case II also had a diabetic wife. I will refer to this later as conjugal diabetes.

Case IV.—An instructor, aged fifty-five, consulted me for a "run-down condition." For some time he had felt disinclined to work, had lack of power to concentrate, loss of memory, a tendency to sleep, and occasionally sciatica. He had no polyuria, polydipsia, or loss of weight. The urine showed one-half per cent sugar. I prescribed the elixir of iron, quinine and strychnine phosphates, now unofficial, and treated him according to the diet advised by Dr. E. P. Joslin, of Boston.

I started him with a diet containing carbohydrates to the amount of 150 gm. From this amount he went to 125 gm.; then to 100 gm., and on 75 gm. he became sugar-free. I kept him on a strict diet with vegetables in the 5, 6 and 10 per cent groups, with four ounces of cream.

He has remained sugar-free and is a most conscientious patient; he weighs his food and now has increased his diet to 150 gm. of carbohydrates. It has been over two years since he has had glycosuria, and several times each year he has a thorough examination to discover if any abnormality is present.

CASE V.—A woman, aged sixty, consulted me two years ago for pruritus vulvæ, without eczema. I found 2 per cent sugar and also every evidence of a chronic interstitial nephritis. I took the sugar from her desserts, but did not interfere in any other way with her usual mode of living. She had probably been in this condition for a long time, but as she had very few symptoms, and as her diseased organs functioned fairly well, I decided not to treat either the nephritis or glycosuria. To interfere with one would simply harass the other into activity.

CASE VI.—A woman, aged sixty-seven, had been under my care for several years for a chronic glomerulonephritis. Her urine was examined each week and always showed much albumin, no sugar, and many hyaline and granular casts. Two years ago her kidney condition quieted down, the casts disappeared and she felt fairly well except that she had a troublesome parchness of the mouth, and consequently, polydipsia. Repeated examinations of the urine showed no sugar nor β-oxybutyric acid.

She went to a neighboring city, consulted a physician who immediately diagnosed diabetes and advised a strict diet. There is nothing that an aged person fears more than diabetes. The diet was continued for some

time with the result that when she returned to me the old degenerative kidney changes had returned, but the urine still showed no sugar.

On questioning the patient I found that the physician had not taken a specimen of her urine, therefore, had not tested it; consequently, had made a snap diagnosis. Moreover, the rigid diet broke up an excellent compensation and caused the old nephritis to light up again. To this day the thoughts of diabetes have produced a mental depression which will never be overcome. Nothing will convince her that she has not diabetes.

Case VII.—An Indian woman, aged fifty-three, had gangrene of the left forearm. After examining the urine several days in succession and failing to find glycosuria, on the fifth day I found 3 per cent sugar. She would not diet and moreover left the gangrenous forearm to be amputated by nature. She absolutely refused to consider any surgical intervention. The amputation by nature was a wonderful result and is as perfect as if performed by surgical means. More than this, she is in better health today than in years.

However, at times she experiences pruritus with eczema, and attention to a noncarbohydrate diet is the only thing that will relieve her. The glycosuria is not present at all times and it is undoubtedly due to some pancreatic disturbance. This is evidenced by the presence of fat in the stools. She has refused to change her mode of living because the forbidden list for diabetics is the only food that she cares for and she has always lived in this way. She declares that Indians who were always in the habit of eating coarse food can not live on any other food. She will diet for about a week when she has the pruritus sufficiently severe to cause suffering, after which she returns to her usual diet.

In some of these cases undoubtedly the diabetes has not been of long standing. Diabetes of the aged is entirely different from this disease in younger persons. What will cure a young person will produce the opposite effect on the disease in an aged individual. The diseases of advanced age require as much special attention as the diseases of childhood and if this fact is not borne in mind, disastrous results will often follow.

In a good many instances of old age we can not do anything scientifically to cure them, but a little attention and care for their ailments will mean a great deal toward adding a few years to their lives.

Many of these conditions of senile glycosuria are transient and are merely a part of the senile degeneration. In other cases we find confirmed diabetes as evidenced by all of the minor symptoms of this affection.

In Cases II and III both husband and wife had diabetes. This is rather a common condition and is termed conjugal diabetes. Some of the French physicians who had observed this fact, spoke of it as possibly a contagious disease, but it seems that the same mode of living has much to do with its production.

Symptomatology, Diagnosis and Prognosis

Many patients will pass an ounce of sugar daily for several years without knowing it or having any symptoms. In some cases the symptom that will cause attention will be the loss of weight. In others there may be inaptitude to work, nervousness, neuritis, backache, sciatica, muscular pains, melancholia, polyuria, polydipsia, polyphagia, balanitis and phimosis. Sometimes there will be a urethritis which looks like that produced by the gonococcus. There is usually a tendency to drowsiness, pruritus, with or without eczema, ocular troubles (amblyopia), gingivitis, loosening and falling out of the

teeth. Whenever an aged person complains of any of these symptoms the urine should be examined. At times there will be a single symptom which will cause much trouble. In one instance I saw a troublesome case of balanitis with resulting phimosis. The man had made up his mind to take ether and have the phimosis corrected. However, the discovery of the cause, which was diabetes, probably saved him a good deal of inconvenience, for the proper treatment as to diet corrected the balanitis and in time the phimosis was cured.

Sometimes these diabetics of old age will not have polyuria or polydipsia. In Case IV practically the only symptoms were sciatica and inaptitude to work. It was only by routine examination, a regular process like a mechanic cleans an engine, that the sugar was discovered. Occasionally a pruritis of the genitalia with or without eczema will be the only symptom.

Diabetes of the aged is usually mild, but very difficult to overcome. Senile patients rarely develop acidosis. It is seldom in the case of kidney complications that they develop acidosis. It is seldom also in the case of kidney complications that they develop uremia. It is unusual for diabetes to cause any increase in blood pressure or affect the arteries. On the other hand, arteriosclerosis may bring on diabetes, especially by producing trouble with the arteries of the pancreas. Cardiac incompetency is a rare complication in the aged.

The danger from infection, however, is great, because the glucose medium in the blood gives an excellent soil for the fixation and development of the staphylococci, streptococci and tubercle bacilli. Tuberculosis in the aged, however, is a rare complication, and when it is present it is usually without symptoms and it is only discovered on postmortem examination. The infectious diseases are apt to develop, partly from the excellent

culture medium the glucose makes in the blood and partly due to lowered resistance.

Treatment

It is well not to tell an aged patient that he has sugar in the urine unless one is obliged to. There is nothing that causes more anxiety and dread in these senile cases than diabetes. The thought of a strict diet, the recollection of their friends who have suffered from the disease, is almost equivalent to calling their ailment by the familiar death-warrant, "old age." Wherever, as in Case IV, the cooperation of the patient is essential it is better to inform him.

In the matter of diet much depends on the individual case. In many instances of senile diabetes the Allen treatment and Dr. Joslin's treatment will produce excellent results and perhaps add much to their comfort and a few years to their lives.

In some cases, however, in advanced age it is bad judgment to change the mode of living. Many times a radical change in the diet has caused bad results in an aged patient. With senility it is not advisable to stop any confirmed habit no matter how bad it is, whether it is in eating, smoking or drinking.

Food such as pork, baked beans, cabbage, pickles, corned beef, or any hearty food may not be well for younger people, at times, yet to allow the senile patient the liberty of eating anything he wishes will be a great help in treating his condition. Many times I have seen this work well. When an old man's appetite is failing it causes him much anxiety and usually any strict diet in the aged will produce anorexia and constipation. The cases that I do not interfere with do not present any symptoms which are very troublesome to the patient. There are times when it is advisable to place them on a

diet and in these cases I use the reduction of carbohydrates according to the method of Dr. E. P. Joslin. I know of several instances where the Allen treatment has given excellent results in the aged. One case I have in mind was a man, aged seventy, who had diabetic gangrene of the leg and was given the Allen treatment prior to amputation. When he became sugar-free the leg was amputated, with an excellent result, and he lived almost a year after this in comparative comfort.

The following diet list is very convenient to use in private practice where it is difficult to have the coöperation of the patient by weighing food, etc. It is far from an ideal diet, but in private practice it is impossible to follow out hospital rules. Moreover, if the diet list is too complicated it is seldom that anyone will take enough interest in the aged person to prepare the food according to the list.

Diet List

Allowed

Soups and broths made of meat of any kind without vegetables; ox-tail, turtle, gumbo, curry.

Eggs in any form.

Fish. Fresh fish of all kinds and fish roe, anchovies. Salt fish, cod, mackerel and herring may be taken unless they increase thirst.

Fats. Olive oil and all animal oils and fats, such as butter, cream, cod-liver oil, bone marrow.

Fresh meat, fowl and game of all kinds. Ham, bacon, smoked beef, tongue, sweetbreads, kidney.

Vegetables. Spinach, cress, chicory, pickles, dandelions, beet tops, celery, artichokes, lettuce, cucumbers, green part of asparagus, cauliflower, French beans, all in moderation. One potato, size of an egg, daily.

Cheese, cream cheese, milk curds.

Jellies made of gelatin, calf's foot, with wine, but unsweetened with saccharin, coffee jelly, lemon jelly.

Fruits, if acid, not sweet. Sour oranges, lemons and grape-fruit. Olives, sour apples, peaches, raspberries, currants, in very small quantity and occasionally.

Nuts, all kinds except chestnuts.

Whipped cream, custards, koumiss, milk, not over one pint a day unless directed; tea, coffee, cocoa.

Whiskey, brandy, rum, gin, dry Rhine or Moselle wine, claret, Burgundy, Apollinaris, Contrexeville.

Strict Diet. Meat, poultry, game, fish, soups, gelatine, eggs, butter, olive oil, coffee, tea; and for variety, tongue, sweetbreads, tripe, kidneys, pig's feet, anchovies, lobster, crabs, sardines, shrimp, bologna sausage, smoked and pickeled meat. Oatmeal, cream, cheese.

Substitute for bread. Gluten flour may be used for thickening broths, egg puddings, etc. Receipt for Gluten Biscuits: Gluten flour, one cup; best bran, previously scalded, one cup; baking powder, one teaspoonful; salt to taste; two eggs; milk or water, one cup. Mix thoroughly.

Substitute for sugar: Saccharin tablets, ½ grain, obtainable at druggists. Each tablet equals one lump of sugar. Do not exceed 4 to 5 grains daily. Very acid fruits may be sweetened with saccharin or cooked with a little cooking soda to neutralize the acidity. In cooking foods avoid flour. Melted butter may be used as a substitute. Roast beef should not be basted with flour; meat soups must not be thickened.

Forbidden

Sugar in any form—syrup, molasses, candy, jams, honey. Rice, bread, sago, tapioca, arrow-root, cornmeal, hominy, barley, macaroni, spaghetti. Pastry, cake pud-

dings and everything made of flour. Peas, parsnips, beets, carrots. Champagne, cider, ale, beer and port.

* * * *

The difference between transient glycosuria and diabetes is only one of degree. In transient cases the urine will sometimes become sugar-free without treatment. When nephritis is complicated by diabetes or vice versa, I usually do not treat it, except by intestinal elimination. It has been my experience that to treat one disease causes the other to become active and may terminate in a serious condition.

The elixir of iron, quinine and strychnine phosphates, now unofficial, works well clinically. Sometimes, especially if the patient has a bronzed condition of the skin, the solution of two grains of pancreatin and sixteen grains of potassium carbonate to the ounce, works well in drachm doses four times a day. Codeine has a good effect on many cases of diabetes in the aged. If there is any acidosis, a teaspoonful of sodium bicarbonate three or four times a day is indicated.

There are two complications of which I wish to speak. I have treated several large carbuncles on diabetics recently, without excision or incision. An antiseptic solution somewhat similar to the liquor antisepticus alkalinus, N. F., with the addition of phenolic ethers and other essential oils was injected deep into the carbuncle, one cubic centimeter being injected several times through the mass. This is repeated each day until it discharges freely. The Indian woman who had the diabetic gangrene of the forearm left the amputation to nature and it resulted in a perfect stump; in fact, it has the appearance of a flap operation.

These cases were not treated nonsurgically in an effort to depreciate surgery, but they were first used in

patients who absolutely refused surgical intervention. There is no question that surgery is the proper treatment for these complications, and modern anesthesia has made great advances recently in the diabetic cases so that it is not such a serious problem to administer anesthetics to aged diabetics as in years past.

Conclusions

1. Diabetes in the aged differs from that in younger persons.

2. What will cure diabetes in the young will sometimes produce bad results in the aged.

3. Many cases live longer and more comfortably if left untreated.

4. Many cases of diabetes are complicated by nephritis, and vice versa.

5. Urinalysis in aged patients is much neglected.

6. The term diabetes causes much anxiety to an aged person. To them it looks like certain death.

7. Dr. Joslin's and Dr. Allen's treatment give good results.

8. Treatment in most cases must be gradual and not vigorous.

9. Acidosis rarely develops in aged patients.

CHAPTER XVII

URINALYSIS IN THE AGED

CASE I.—A woman, aged sixty-three, consulted me for a numbness in the right side of her body. She was nervous, melancholy, and complained of polyuria, polydipsia and polyphagia. A urinary examination showed one and one-half per cent sugar and β-oxybutyric acid. She was given treatment according to Dr. Joslin's method for diabetes and in the course of a few days the urine became sugar-free. However, as this was brought about it was also observed that the urinary sediment, which was normal before the sugar disappeared, became filled with small and large granular casts.

It was evident that we were dealing with a combined condition of nephritis and diabetes. A nephritic diet caused the sugar to return. On a nonrestricted diet she improved although the sugar did not disappear.

CASE II.—A man, aged seventy-six, had glycosuria but failed on a strict diet. He had no other symptoms of diabetes and on a nonrestricted diet the sugar disappeared.

CASE III.—A man, aged seventy, has had nephritis for several years. The urine recently showed the presence of sugar, but he does not present any other symptoms of diabetes.

These cases are very common and anyone who is doing urinalysis for his aged patient knows the frequency of these findings.

Case I represents undoubtedly a case of glycosuria of renal origin. Nephritis is the underlying disease and

the glycosuria is merely a symptom of this disease. Cases II and III represent glycosuria which is transient and due to the general degenerative changes accompanying old age. They do not require treatment.

There is another type of urinary finding in which the symptoms of diabetes are the most prominent yet the presence of many casts shows the condition complicated by nephritis. The urine of comatose patients usually contain albumin, sugar and casts, therefore, it is very difficult to make a diagnosis of Bright's disease or diabetes in these comatose patients.

Albuminuria in the Aged

In most instances I do not attach much importance to the finding of albuminuria in the aged. Its presence in most cases indicates a senile degenerative change which is normal. However, the combination of albumin, sugar and casts in the urine, together with clinical symptoms which point to disease, makes the presence of albuminuria of importance. Likewise, where there is much pus or blood in the urine the thick layer of albumin is of clinical importance and comparative quantitative tests show whether the condition is improving.

It is well to use two or three different tests to avoid mistakes. I use the nitric acid test and also the acetic acid, salt solution and heat test. The latter test will prevent a confusion with nucleoalbumin.

Glycosuria

In a good many cases the urine will have to be examined several days in succession, in order to elicit the fact that the patient has diabetes. I had a woman, aged fifty-three, who had gangrene of the left forearm. After examining the urine several days in succession and fail-

ing to find glycosuria, on the fifth day I discovered 3 per cent sugar.

In the routine examination of the urine with all aged patients the number of cases of glycosuria found is surprising.

A great deal, however, depends upon the test solution employed. Very often with the Fehling's solution the sugar will not be seen until the specimen has stood overnight. If this test is employed and conclusions derived without allowing the tested urine to stand for several hours, the results will be misleading. Again, Fehling's solution is very apt to turn the specimen a muddy green color. This is not sugar, but clinically when this is found complicating nephritis a protracted convalescence is certain.

I have found sugar in many cases of Bright's disease so that it would appear from a careful study of minor symptoms of Brightism that the sugar is a symptom, and is possibly from renal origin. It is a serious combination to find sugar, albumin and casts in the same urine.

Although Fehling's solution is very safe, undoubtedly Benedict's solution is more apt to detect smaller amounts of sugar. It is well to corroborate the diagnosis by using both tests when there is any doubt.

In the aged the tests for chlorides, sulphates and phosphates are usually without much importance.

Acidosis rarely develops in senile diabetes therefore β-oxybutyric and diacetic acids are not often encountered.

The urea test, likewise, does not give much information in aged patients. Senile patients who are uremic may have a normal urea test. Indican is often found and is of much importance in determining the presence of intestinal toxemia. I have seen, however, some senile cases of intestinal toxemia that did not have indicanuria.

Microscopical Examination

An occasional cast, like the presence of albumin, is a normal finding in some urines and is not important. However, the presence of many casts together with red blood corpuscles indicates nephritis. At times it is impossible to discover these abnormalities and several examinations may be necessary before the true condition is revealed. This is true of a contracted kidney which is a very difficult condition to diagnose. The hyaline casts are often so small and transparent they are only found after the most careful examination is made. In some cases of contracted kidney it is only by repeatedly centrifuging the specimen, that the casts will be seen.

Erythrocytes may be due to nephritis, cystitis or prostatitis. Many granular casts have erythrocytes scattered through them and indicate a rather serious condition.

Pyuria may be due to pyelitis, cystitis or prostatic disease. In women the pus may be from vaginal origin, therefore it is well to use a vaginal douche before collecting the specimen. A large albumin ring is apt to be caused by pyelitis. Pyelitis in the aged may be due to cancer of the colon. It is well to add acetic acid to the slide in order not to confuse the leucocytes with other things.

To make a correct interpretation of the urinary abnormalities it is essential to follow the clinical symptoms. For example, if symptoms of Brightism are predominant and sugar is also present the Bright's disease would be more important than the glycosuria. On the contrary, if sugar is combined with albumin and casts, if the symptoms point to diabetes a diagnosis of this condition should be made.

The presence of red blood corpuscles almost always points to nephritis. If there are no symptoms attending these conditions a diagnosis of senile degenerative change would be made.

The study of geriatrics does not afford the possibilities that practice with younger individuals presents, therefore, it is seldom that a physician takes enough interest in his aged patients to make a urinary examination. A routine examination should be made in all senile cases and the practice of depending upon an albumin and sugar test as is commonly done should be discouraged. Most physicians do these two tests, which are of very little importance with the aged unless combined with a microscopic examination, and if negative findings are made, conclusions are derived without any degree of accuracy.

I have seen several instances where physicians have made diagnosis without making any examination at all. In a case of nephritis a woman consulted a physician who made a diagnosis of diabetes because she had polyphagia and polydipsia. He gave her a diabetic diet which irritated her kidney condition and brought on an acute exacerbation of a chronic nephritis. The patient admitted to me that she did not give him a specimen of urine for examination.

A little more care given to the urinalysis of a senile case would produce better results in the aged. Sometimes proper attention to it will prolong life many years and make a new person of an aged individual.

I remember an old man who had been a great burden to his family. The so-called "old age" had made him very disagreeable about the house and life was not worth living.

Three years ago attention was given to the cause of his "senile mental state," which was due to uremia and

careful treatment in this direction produced a new man mentally and in time he resumed his work and became self-supporting. Today, old age is dear to him and his family, the disagreeable mental state has disappeared and undoubtedly the family would feel very bad if he should be taken away. After all, there is no better citizen today than an old soldier who is well preserved mentally and physically.

CHAPTER XVIII

SENILE BRONCHITIS

Case I.—An old man was taken ill with a chill and had a severe pain in the sternum. A long breath and cough was very painful to him. He had a fever of 101° F., pulse was rapid and extremely small. As the condition progressed the expectoration was more painful and with difficulty he raised a small amount of tough, viscid, semi-opaque, greyish mucus.

His shortness of breath became more pronounced and he was obliged to sit upright in bed to obtain relief. The lips and tongue were livid and he was rapidly failing. The breathing became more labored, the pulse became more rapid and irregular and the old man died on the second day of his illness.

Case II.—A woman, aged sixty-seven, was taken ill with pain in the chest and cough. Her temperature was subnormal and the pulse rate was very rapid. The expectoration was painful and with difficulty she raised a thick, rusty sputum. Toward evening she had a slight elevation of temperature. She gradually improved and on the tenth day was much better.

These cases represent the acute form of senile bronchitis which is very common and it is very difficult at times to differentiate between severe bronchitis and pneumonia, especially in the fulminant type in which the patient dies a short time after the onset of the attack.

The type ordinarily seen is similar to Case II where the process is not as violent and where it can easily be seen that the patient is not sick enough to have pneumonia. It is difficult to diagnose from senile congestion

of the lungs as there is but little difference in the symptoms of the two conditions. Congestion of the lungs may accompany acute bronchitis, but the most common cause of congestion is nephritis or heart disease.

As a result of nephritis we may get a secondary congestion of the lungs due to the heart not being able to send the blood through the vessels of the kidney. Bronchitis may also accompany congestion and it is surprising to see the number of cases of bronchitis due to nephritis which improve when the treatment is given for that disease.

Bronchitis due to influenza is very fatal in the aged and rapidly extends to bronchopneumonia. It may develop from rhinitis, but in the aged usually it begins as a distinct disease.

In treating acute senile bronchitis the first thing is to give a saline laxative to deplete the system, to remove the pulmonary congestion and free the bronchial tubes of the mucus. I usually prescribe small doses of ipecac or Kermes' mineral to loosen the cough. Ammonium chloride and ammonium carbonate work well clinically and medicated vapors with camphor in the water may be of benefit for inhalation. If there is prostration it may be advisable to give one grain of quinine sulphate and 1/60 grain of strychnine sulphate every three hours. It is essential to keep the bowels open.

When there is extreme shortness of breath (perhaps it may be called suffocative catarrh of Laennec), alcohol to its full physiologic effect is indicated. Brandy is given in one-half ounce doses every half hour until the cheeks are red and in those cases of extreme prostration where death is imminent alcohol to its full effect may be the means of saving the life. Unless it is given in large doses it is of little benefit.

Chronic bronchitis may develop from the acute form or may be a distinct affection due to some secondary

cause as nephritis or heart disease. A moderate amount of bronchial secretion is normal to the aged, especially in the morning when they clear the bronchial tubes of the night's accumulation of mucus. However, a greater amount is abnormal and may be the only symptom of chronic bronchitis. Again, the old man may have this condition, but a sudden change in the atmosphere aggravates the disease and he has a shortness of breath, a fullness in the chest and a sensation of pressure.

Constipation by causing congestion of the portal circulation or nephritis causes congestion of the kidneys and a secondary congestion of the bronchi results. Sudden checking of a skin eruption or the checking of leucorrhea in the female may cause it. Chronic bronchitis may be due to tuberculosis but it is rare in old age. There is an intimate association between bronchitis and piles, gout, rheumatism, checked perspiration, suppression of urine, too rapid healing of ulcers, etc.

On examining the chest, auscultation may show a few scattered rales, but no definite changes. Percussion does not reveal any abnormality and an x-ray examination does not give much evidence in these cases.

The disease is slow, but progressive, but in most instances I fail to see that they develop pneumonia more often than any other old person. It seems, in most cases, to be a harmless affection unless it is suddenly checked.

In treating senile bronchitis the general condition of the patient should be given consideration and warm clothing worn. Woolen underclothing is advisable in these cases and if the patient is able to spend a part of the year in a warmer climate it would be of great benefit.

The discharge, no matter how profuse or fetid, should not be checked as it may cause paralysis and suffocation. Ammonium chloride combined with elixir calisaya is of benefit and the elixir of iron, quinine and strychnine

phosphates may be given. A mixture of calcium and creosote may help and arsenic trioxide, 1/100 grain every four hours may be of benefit. Cod liver oil works well with the aged and should be prescribed.

Too much can not be said for the care of the bowels in cases of senile bronchitis. By relieving the portal congestion with a mercurial and a saline the next morning, the patient will be much improved in his breathing. By keeping the emunctories working and preventing any further congestion of the internal organs the heart is relieved of this extra load and does not have to work as hard to force the blood through the lungs.

A restricted diet should be ordered and overeating prohibited. A diet used for nephritis will be of benefit even though the patient may not have nephritis. A microscopic examination of the urine should be made to discover whether the kidneys are diseased, since kidney disease is one of the most common causes of senile bronchitis.

CHAPTER XIX

SENILE PNEUMONIA

CASE I.—A man, aged seventy-five, had coryza which rapidly developed into bronchitis. The next day he had a severe pain in the right side. His temperature and pulse rate were normal; but the respiration was thirty times a minute. Although no local signs of consolidation could be detected, the fact that he was rapidly failing, together with the increased, shallow respiration, gave clinical evidence that he had senile pneumonia.

He continued in this condition for several days, and although the temperature and pulse-rate were normal the respiration continued about thirty-five a minute. On the seventh day there was no apparent improvement in his condition, and as there was apparently little chance for recovery, it was decided to try the last resort for the aged, namely; to force him out of bed and get him into a chair. This usually has a beneficial action in senile cases.

His breathing became easier, and in a few days it was evident that he was gaining. In the course of a few weeks the old man was about his work again.

CASE II.—A woman, aged seventy, had a fall which resulted in a fracture of the right hip. The family was warned that the greatest danger was the development of senile pneumonia.

On the fourteenth day after the accident it was noted that the aged patient was growing rapidly weak and losing weight. The pulse and temperature were normal, but the respiration was thirty-six. She died on the sec-

ond day from senile pneumonia. It is interesting to note in this case that there was no cough.

Case III.—A woman, aged sixty-eight, was taken ill with headache, cough and shortness of breath. Temperature was 100° F., pulse rates eighty-five and respiration thirty-eight. It was a typical case of what is ordinarily called pneumonia. The cough, rusty sputum, shallow breathing, pain in the side, low muttering delirium, restlessness, and picking at the bedclothes were symptomatic. In a younger person this would possibly be called typhoid fever.

The urinary picture, however, disclosed another condition. The sediment showed an abundance of red blood corpuscles, and many granular casts were filled with blood.

This case was not pneumonia, but an acute exacerbation of chronic nephritis. It is ordinarily called pneumonia, and if it was more generally observed there would be fewer cases reported as senile pneumonia.

Senile pneumonia is a different disease from pneumonia in the young. In the vast majority of cases it is a natural termination of an old person's life. The symptoms are entirely different, and if care is not shown the patient will die before a diagnosis is made.

In cases of fracture or any disease which keeps an aged person in bed there is great danger of pneumonia. It sometimes comes secondary to senile bronchitis. In fracture of the hip it is a very common complication and also after ether anesthesia.

Case III, just described, is well worth our careful consideration, because of its similarity to pneumonia. In all cases the urine should be examined to elicit the possibility of renal disease.

Symptomatology

An aged patient in bed, who is rapidly failing, probably has pneumonia. With an increase in the respiration and delirium, the diagnosis is almost certain.

The temperature and pulse rate are usually normal in the aged, no matter how severe the disease may be. In fact, the temperature is usually subnormal. If the rate is taken at the heart with a stethoscope we may find a quickened heart beat. Owing to the sclerotic condition of the radial arteries the pulse is unsafe as a diagnostic and prognostic sign. It is usually advisable to take the rate at the apex of the heart with a stethoscope.

The findings upon auscultation are usually uncertain. It is customary to find principally the symptoms of pulmonary congestion. Tubular breathing is rare in the aged, or if it is present the signs of edema cover it in our examination.

Diagnosis and Prognosis

The rapid failing of the patient, together with increased respiration and delirium usually make the diagnosis clear. It must not be confused with senile bronchitis or pulmonary congestion. These latter conditions are very common with the aged and are often termed pneumonia.

However, a patient with senile bronchitis will converse with you, but a person ill with pneumonia is too sick for talk. In other words, this man is too sick for bronchitis and congestion, and therefore must have pneumonia. The border line is not sharp and oftentimes it is only a matter of degree.

I have spoken of the analogy with nephritis. Anyone who is following the urinary examinations of his aged patients knows the frequency of pulmonary symptoms complicating nephritis.

Many of these cases of senile pneumonia are in a so-called typhoid state. That is, they have every symptom of this disease. However, typhoid fever is very rare in the aged.

Senile pneumonia is usually the cause of death of old persons. They rarely recover. The presence of fever and a quickened pulse rate is a good prognostic sign, because it indicates more strength than in those patients who have a normal or subnormal temperature or pulse.

Cases of the type described in Case III almost invariably die. The presence of blood and casts in the urine is a very serious complication.

Treatment

Keep senile cases out of bed. No matter how sick the patient is it is advisable to force him into a chair. It relieves the circulation and gives him courage to fight the battle. Usually when old persons stay in bed they will not get up again.

If there are no casts in the urine, I prescribe one grain of quinine sulphate every three hours. The presence of casts contraindicates this. Stimulation should be started early by administering strychnine sulphate 1/60 grain every three hours and later increasing to 1/30 grain. Spartein sulphate is used if the pulse is irregular. Every aged person should take the amount of alcohol he is in the habit of taking daily.

It is well to use whiskey or brandy early, but if the tongue becomes dry during its administration, it should be withdrawn. As long as the tongue remains moist the alcohol works well. Digitalis does not work well in most cases, and the opiates and coal tar derivatives have a harmful action.

The matter of daily bowel evacuation is very important. The compound rhubarb pill works well, but salines

are contraindicated. The matter of autointoxication developing in the course of pneumonia is an important consideration, and many an old man is walking about today who owes his life to a few compound cathartic pills.

In treating cases of accidents, such as fractures, sprains, etc., where the patient is in bed they should be turned on their sides several times a day in order to prevent any hypostatic congestion developing.

If recovery takes place it is usually two months before the aged patient gets out of doors. However, we are justified in allowing them many peculiar privileges regarding moving about, and also in the matter of eating. While the privileges would seem irrational in treating younger people, they may be the means of saving an old person's life.

CHAPTER XX

SENILE GANGRENE

This affection usually appears on the toes, rarely on the fingers and occasionally on the legs. There may be premonitory symptoms, such as pain, coldness in the part, and loss of sensation. A dark-colored vesicle forms, accompanied by pain. The surface lesion may extend and remain moist or it may assume a shrivelled, mumified appearance. This classifies it into the dry and moist forms, or we may get a combination of the two. The adjacent tissues are edematous and cold.

The following interesting case of senile gangrene, or arteritis obliterans, which occurred in my practice, shows the result of a gangrenous forearm in which surgical measures were not used.

Mrs. W., aged fifty-three, the last of the full-blood Narragansett Indians, has had attacks of diarrhea for the past five years. From the character of the feces it undoubtedly was from some pancreatic disturbance. She was taken ill in November, 1914, with another attack of diarrhea, and was sick in bed for one week, when suddenly the left hand became white and painful. The next morning she found the left forearm red and numb, as if it were dead. The pain was intense, and besides numbness there was formication, coldness, edema and a marked diminution in the size of the pulse. The following day there was a cessation of the pulse in that wrist, and the forearm was black and gangrenous. She was ill in bed for seven weeks, temperature 103° F., and pulse rate 130. A part of this time she was unconscious and at other times delirious. Both legs were badly swol-

len and there was a general subcutaneous edema. The diarrhea ceased after the first day.

In January, 1915, she was able to sit in a chair, but the fever and pulse rate of 130 continued. The weight of this patient had dropped from 220 to 150 pounds. In February there was a line of demarcation four inches about the elbow, but she was in no condition for an amputation. An operation was later suggested, however, but the family refused to consider any surgical procedure. In March, the swelling began to leave the legs and she showed some improvement in the general health, so that on the first of April, 1915, she was able to go outdoors. The gangrenous forearm was gradually separating from the arm, and showed the radius and ulna with the periosteum separating from the adjacent healthy bones. She continued to improve in her general health and in June, seven months after the onset of the disease, I felt that she might be able to take an anesthetic safely. The urine had previously been examined several times and was found to be normal. I examined the urine several days in succession and on the fifth day, after previously failing to find glycosuria, I discovered 3 per cent sugar. I decided to use gas-oxygen anesthesia, owing to the bad results from ether in these conditions of glycosuria. The family again refused to allow any surgical procedure.

The arm continued to slough and in July I sawed the gangrenous forearm five inches below the elbow, leaving the radius and ulna exposed. No anesthetic was required for this procedure. In August, I removed two inches more of these bones. She continued to improve and regained her weight to 220 pounds and was able to go about her work.

In October, she fell and broke the radius segment from the stump of the arm and in November the other bone

Fig. 9. Elbow showing perfect amputation of forearm by gangrene without surgical measures.

was broken in a similar manner. This left a stump with two discharging points, which healed in three weeks and is as perfect as any surgical operation could be. The flap made by nature is exactly the same as if the flap-operation were performed by a surgeon.

The patient today, two years after the attack, is in better health than for several years and is able to do practically all of the work for her home.

In some cases of senile gangrene the patient will first have pain in the extremity, perhaps localized in a single finger or toe, and it is common for the patient to experience a pricking sensation or a numbness. The pulse will disappear in the part affected and in the course of a few hours the part is dead.

Before gangrene has fully developed the part may assume a blue color. There is a small vesicle which develops and in a few hours several vesicles appear which finally coalesce. There is considerable pain associated with these vesicles before they burst and even after they have ruptured. The skin beneath the vesicles is red or blue in color and is a moist surface.

There may not be a moist surface and in its place there may be a shrivelled appearance and on cutting the part little or no blood escapes. It has been said that the dry form is more common in the poorer classes who are undernourished while in persons who are robust the moist form is more common.

The adjacent tissues, regardless of the form of gangrene, are swollen and red or blue in color. There may be vesicles form above the gangrene. My patient was extremely ill with general symptoms. She was unconscious for several days, had an extremely high fever, very rapid and thready pulse, extreme prostration and a cold, clammy perspiration on the skin. The excretions were of a fetid odor.

In time, as this period of fever and prostration improved, she went into another stage, which was the period of reaction. Her general condition improved and nature seemed to grant a truce in her disease.

The symptoms left as they came and she finally was able to walk out of doors. There was an inflammed border above the gangrenous part and the line of demarcation was found, but in this case it was not heeded.

In senile gangrene we may have an extremity which has lost its sensation for several days before there is any sign of gangrene developing. The fact that there is coldness of the part and that the arterial pulse is like a piece of string, gives evidence that gangrene is developing. It may be caused by several conditions and anything which produces thrombosis like atheroma will cause endarteritis obliterans.

Diabetes perhaps is the most frequent condition associated with gangrene, but nephritis may cause it in rare instances. Syphilis affecting the vessels is a very frequent cause.

When a person has senile gangrene the part should be elevated and the patient given a diet consisting of milk and cereals. Support is given by means of strychnine sulphate, 1/60-1/30 grain every three hours if the heart shows signs of weakness.

A wet dressing of the alkaline antiseptic solution or aluminium acetate solution diluted by adding a tablespoonful of either solution to a tumbler of water may be used. It is very essential to get free elimination of the bowels as the system is loaded with toxines as a result of this acute process.

When the line of demarcation has formed surgical procedure should be resorted to without delay. It is a very serious affection. It is interesting to discover, since reporting this case, several cases treated by physicians

many years ago were similar in results as the case reported and the patients lived useful lives for a long time without an operation. There is no question, however, that surgery is the best treatment for many cases as soon as the line of demarcation forms.

CHAPTER XXI

SENILE PROSTATIC HYPERTROPHY

CASE I.—A man, aged seventy, complained for a few months that he was disturbed several times during the night to urinate and at first noticed that it was an effort for him to void. Later he found that he was obliged to walk the floor a few minutes during the night in order to start the flow. During the day he had no difficulty. In the course of a few weeks he was aware that during the day he could not void freely and the bladder became distended and he experienced retention of urine and also incontinence.

He was taken in the middle of the night with great pain in the abdomen and when I arrived I saw the pitiful condition he was in. I catheterized him with a flexible metal catheter and prescribed for him a four-grain tablet of chromium sulphate to be taken every three hours. He was also given two drachms of magnesium sulphate and a milk diet was prescribed.

It was necessary for me to catheterize him for two days, but on the third day he was able to void quite freely. On the chromium sulphate treatment he improved and for the past year has not suffered any inconvenience from his prostatic hypertrophy.

CASE II.—A man, aged eighty, was taken suddenly ill with pain in the abdomen and on examination the bladder was found to be greatly distended. He was catheterized with a rubber catheter and the family were taught to use it. He was given the chromium sulphate treatment and in two weeks could void freely and for several months up

to the time of his death he did not experience any difficulty in urinating.

CASE III.—A man, aged sixty, had retention and it was necessary to use a rubber catheter. It was discovered that his prostatic hypertrophy was due to syphilis and on a potassium iodide treatment he recovered. In time, however, he was not satisfied with his condition because it returned occasionally, therefore, he insisted upon an operation which was against my advice; he was operated upon in a hospital and died on the following day.

CASE IV.—A man, aged seventy-five, had a chronic syphilitic condition of a finger. He was taken at times with inability to void freely, but was promptly relieved by potassium iodide.

These cases represent types of senile hypertrophy of the prostate. It is rather strange that a senile prostate hypertrophies while almost every other senile change is degenerative or atrophic. The gland may be enlarged uniformly or the middle lobe alone may be enlarged.

As prostatic hypertrophy is a normal senile change up to a certain degree, an enlarged prostate may not interfere with functions that are normal to old age. It is when this gland, which has undergone hypertrophy, becomes congested either from nephritis, or from the irritating toxines of intestinal origin, it causes a train of symptoms that can be removed promptly if proper treatment is given.

From the effects of congestion the bladder becomes distended and then a cystitis may develop. The retention of urine owing to the enlarged prostate may cause a general toxemia or urosepsis that is not associated with nephritis, and which may develop into cystitis or pyelitis.

Adenocarcinoma or any other malignant growth of the prostate may also cause temporary congestion which makes the symptoms much more pronounced and severe.

However, under proper treatment this congestion which has been added to a malignant growth of the prostate, may be corrected to a degree and the patient will get a little more comfort. Syphilis may be the cause of hypertrophy and if a history of this disease is given specific treatment should be prescribed.

Nephritis, in my opinion, is by far the most common cause of prostatic hypertrophy. When these patients who have chronic nephritis suffer from an acute exacerbation of the disease the prostate may have acute symptoms due to congestion which may cause retention. Treatment promptly given will usually give good results.

I have treated about 200 cases of senile prostatic hypertrophy and I have never had recourse to the so-called "catheter life" for two weeks' time and have never advised an operation or had a patient who has been operated upon for this condition. It is not my intention to depreciate surgery, in particular prostatectomy, because I believe the latter operation to be very necessary and successful in a great many cases.

Nevertheless, with electric treatment and medicinal treatment I have kept those old patients in a comfortable condition without a "catheter life." I have been greatly impressed with the simplicity of the treatment in some cases. An old man who had syphilis complained of symptoms which were found to be due to prostatic enlargement and the only medicine prescribed was a saline eliminant which relieved the bowels and removed the toxines from the system. This man has had several attacks, but each time I find that free catharsis will relieve him.

A man, aged seventy, found he was obliged to urinate every hour during the day and also had hematuria. He was relieved by taking an alkaline mixture containing fluid extract of hydrastis, pancreatin, potassium carbonate and fluid extract of rhubarb. This mixture combined with a saline laxative relieved him.

Those cases due to syphilis, strange to say, do not always do well on either mercury or potassium iodide. I have made the statement that some of the best results in syphilis have been obtained from remedies other than the iodides or mercury. Many of these cases will be relieved by six minims of fluidextract of buckthorn in syrup given three times a day.

No doubt in private practice a physician does not have the severer types seen in hospitals, therefore, his observations do not always hold good in a general way. I am convinced, however, that much can be done for senile prostatic hypertrophy and if this treatment was followed I believe prostatectomy would be unnecessary in many cases. It is not my purpose to give a complete consideration of the subject and it is my plan, as in the other sections, to give principally my personal experience and not make a resumé of some other physician's methods.

Treatment

As I have written above the results of treatment from the simplest remedies are surprising. A great many cases which we see are merely due to congestion and a clearing of the intestinal tract, together with the osmotic effect of a saline laxative, relieves the prostatic mischief insofar as it leaves it in a state that does not cause much discomfort even though hypertrophy still exists.

When true prostatic hypertrophy is present I doubt if any treatment except surgical will reduce this enlargement. However, a prostate can be very large without causing symptoms unless it becomes congested. The aged are subject to congestion of the portal circulation, which in turn causes more or less congestion of the kidneys. It is this type of case that usually manifests prostatic symptoms and in time if neglected becomes chronic and beyond hopes for treatment.

A man who has prostatic enlargement, is ill in bed and is obliged to have catheterization three or four times a day, is given one tablet containing four grains of chromium sulphate every three hours. If it is necessary to catheterize him, I try first a rubber catheter and if this fails I use a flexible metal catheter of rather large size. Many times I have found a large catheter will go by the obstruction while a smaller one will fail. I leave the large catheter against the obstruction for a few moments and it will usually go into the bladder without using any force. Very seldom does it cause hemorrhage, but I do not think that the hemorrhage is always a bad sign. Many times a little bleeding will relieve the symptoms.

If the old man is suffering much pain from frequent urination, I give every two or three hours a tablet containing 1/24 grain of heroin hydrochloride; or diacetylmorphine hydrochloride will do as well. If necessary six of these tablets may be taken in two hours. Heroin works well with aged patients and relieves their pain.

I prescribe with the chromium sulphate a mixture containing potassium bromide, fluidextract of buchu leaves, fluidextract of uva ursi, and if there is frequent urination I add two minims of tincture of cannabis indica to each teaspoonful to be taken every three hours.

If there is cystitis and an accompanying nephritis, it may be well not to use chromium sulphate because it is somewhat irritating to the kidneys. In these cases I prescribe a mixture containing sodium bromide, potassium acetate and fluidextract of pareira brava. The latter remedy has an excellent effect upon the bladder mucous membrane and relieves the pain and frequency of micturition.

These cases of frequent and painful micturition will be relieved more often, however, by a saline laxative

which relieves the pressure from the contents of the rectum, also relieving congestion by osmosis. Free elimination is by all means one of our best weapons in the medical treatment of prostatic enlargement.

This treatment will usually relieve the old men so that they will void more freely and make the use of the catheter unnecessary. Further treatment consists, especially in obstinate cases that do not yield, of diathermia treatments given with a special type of apparatus, the new

Fig. 10. Monae Lesser rectal prostatic electrode.

Telatherm apparatus made by Wappler with a Monalisier type of electrode which has a metallic surface for the prostate. It is inserted into the rectum and a treatment is given for five minutes, using the greatest amount of current that does not cause discomfort.

Telatherm (Gk. Tele—at a distance; therme, heat) gives a high frequency current which has an absolutely smooth discharge and this discharge can be varied by means of a milliammeter from very mild warmth to a great amount of heat. Diathermia treatments (Gk. dia, through; therme, heat) are given by the Telatherm machine by means of two poles on a D'Arsonval current. One pole is attached to the electrode in the rectum and the other pole is attached to a piece of lead foil about three or four inches square which is placed on the abdomen in the suprapubic region.

Another method is to apply a flexible metal electrode 4x6 inches square on the abdomen in the suprapubic region and another 3x4 inches square over the lower part of the spine. The treatment consists of using the electric current to the point of discomfort and a treatment

of five minutes is given. It may be well to continue the treatments for several months, giving them every day or every other day for a month and then two or three times a week for six months. Then repeat after a rest of three months, continuing the last treatment for a month. The amount of current used is registered on the milliammeter of the Telatherm apparatus and at the next treatment the same amount can easily be given. Diathermia treatments apparently work well in most cases and I feel confident that I have many patients today in comfort who would have been obliged to have prostatectomy performed if diathermia treatments had not been used.

There is a period of warning in prostatic hypertrophy that takes several years before the serious complications develop. In this stage if the disease could be discovered, diathermia treatments would work well and prevent the disease from pursuing a chronic course. Usually the first treatment will relieve them of the congested sensation they experience. The heat from the Telatherm relieves the congestion in the prostatic tissues and disperses the edema through the stimulating action on the flow of the blood stream.

With diathermia treatments practically no heat is applied to the outside, but penetrates the internal tissues. The Telatherm produces about two million oscillations a second and does not injure the deeper tissues. The effect of diathermia on the prostate is to supply new blood and remove the old blood. In this way it resembles the hyperemic treatment, but the end result is to relieve the congestion and improve the tone of the muscles.

The results have been very encouraging in this treatment, but if improvement does not take place in three months, operation is necessary. Diathermia also temporarily improves the congestion accompanying adenocarci-

Fig. 11. Telatherm apparatus.

noma of the prostate and improves inflammatory conditions of the bladder.

If diathermia does not work well, I employ a vacuum electrode from a Campbell Model "E" coil and give a mild current for five minutes every other day. It is not advisable to allow these instruments to remain in the rectum over five minutes because the heat may cause a piece of mucous membrane to come off on the electrode. This form of electric treatment has also been very successful.

Recently good results have been obtained in carcinoma of the prostate from the use of radium. Doctor Hugh Young has been using it to advantage as has Doctor B. S. Barringer and others. There are several methods of application of the radium. Fifty to one hundred milligrams of radium element is usually sufficient and it should be screened with two millimeters of metallic and one millimeter of rubber screening. The cross-fire method can be used to advantage and an exposure from four to six hours repeated three or four days in succession is an excellent method.

Doctor Barringer* in treating carcinoma of the bladder has performed laparotomy, opened the bladder and treated the cancerous surface for three hours.

Doctor Barringer also treated the prostatic condition by means of a needle containing 50 or 100 millicuries of radium. The needle is inserted into the perineum between the urethra and rectum and guided by the finger in the rectum until the end of the needle has passed into the middle lobe of the gland.

In some cases the results are encouraging and many of our best surgeons are obtaining good results from the use of radium. I believe in most cases of prostatic hypertrophy that the so-called "catheter life" and

* The Treatment by Radium of Carcinoma of the Prostate and Bladder. Preliminary report. Journ. A. M. A., Vol. LXVII, No. 20, pp. 1442-45. Nov. 11, 1916.

prostatectomy are unnecessary. There comes a time when operation may be a necessity, but I have never seen a case yet that medical treatment or electric treatment could not relieve to the degree of giving comfort.

Perhaps they do not feel perfectly well; the majority of cases of prostatectomy suffer enough for months after their operations. The surgeon does not see the patient after his discharge from the hospital and he marks on his index card "uneventful recovery." The family physician, however, is obliged to see the man work out of his difficulty and it takes, in many instances, months to recover from the operation.

One of our authorities said "the unsatisfactory results of medical treatment have removed prostatic hypertrophy from the field of the physician to that of the surgeon." From my limited experience in about 200 cases with satisfactory results I believe that the above statement is not correct. Medical treatment has its place in prostatic hypertrophy and it is a worthy place.

CHAPTER XXII

UROSEPSIS — EDEMA FROM PROSTATIC RETENTION—ENURESIS—CYSTITIS

Case I.—An Indian, aged sixty, consulted me for a general edematous condition of the body. For some time he had been unable to empty his bladder completely although he micturated frequently. He suffered no pain, but had a heavy feeling over the pubis. The edema was quite marked; his heart was apparently normal as was his blood-pressure; repeated examinations of the urine failed to detect any abnormality either by chemical or microscopic tests.

He was placed in a hospital where he could be catheterized frequently and was given no medication at first. When the bladder was emptied by repeated catheterizing him, the edema rapidly disappeared as did his symptoms of urosepsis, that is, headaches, chills, vertigo and malaise. However, if catheterization was neglected the edema returned. He was later given chromium sulphate, eight grains every three hours, catheterization was no longer necessary and the improvement was lasting.

Case II.—A man, aged sixty, had retention due to prostatic hypertrophy, which resulted in a dribbling of urine. It was very disagreeable and caused an odor to his clothing. Besides chromium sulphate medication he was given high frequency treatments with a vacuum electrode applied on the perineum for five minutes and five minutes with a special prostatic electrode in the rectum. The condition improved under this treatment.

Case III.—A woman, aged seventy, had enuresis which was very troublesome to her. Whenever she coughed or

hit a pebble in walking the urine would dribble. I prescribed before meals a teaspoonful of the elixir iron, quinine and strychnine phosphates, now unofficial in our pharmacopeia.

Case IV.—A man, aged sixty-three, consulted me for a very troublesome symptom. He did not have a frequent desire to micturate, but when he did have the desire he was obliged to go at once or he would lose control of it. I prescribed 1/60 grain of strychnine sulphate before meals and he improved.

Case V.—A woman, aged fifty-five, had a frequent desire to micturate. There was no pain and no evidence of cystitis. I gave her a mixture containing five drops of tincture of nux vomica in each teaspoonful to be taken before meals and the result was excellent.

Case VI.—A man, aged fifty-eight, consulted me for severe headaches, vertigo, chills, numbness in his fingers and malaise. He had prostatic hypertrophy, but I was unable to find any other cause for his symptoms. I made a diagnosis of urosepsis, or absorption from prostatic retention, and prescribed an eliminative treatment consisting of magnesium sulphate and potassium bitartrate twice daily. The symptoms disappeared as the prostatic condition improved.

These cases are very common in private practice and the results of treatment are usually satisfactory. Many of the symptoms of frequent urination and enuresis, even prostatic retention, are improved by strychnine sulphate which improves the tone of the vesical sphincter. Some cases of prostatic retention are occasionally relieved by the elixir of iron, quinine and strychnine phosphates.

Cystitis in the aged is usually due in the male to prostatic retention and in the female is often due to pyelitis.

I have used the following mixture to advantage in cystitis:

℞

Pancreatini	ʒss
Potassii Carbonatis	ʒij
Fluidextract Rhei	ʒij
Fluidextract Hydrastis	ʒjss
Tinctura Cinnamomi	ʒss
Syrupi qs ad	ʒiv

Misce.

Sig.: Take one teaspoonful in one-half wineglass of water every three hours.

Fluidextract of pareira brava, five minims every three hours, and occasionally fluidextract pichi may work well. Copaiba and santal oil capsules work well in some cases. If the micturition is very frequent and troublesome, I use tincture of cannabis indica, one or two minims in a teaspoonful of elixir containing five grains of sodium bromide to be taken every three hours.

High frequency treatments will sometimes relieve troublesome conditions which are noninflammatory, especially when they involve the vesical sphincter. In these cases either diathermia treatments with one electrode on the pubis and the other on the spine, or a surface electrode applied to the perineum will help.

I do not use the remedies ordinarily used for bladder conditions and never prescribe urotropin or ever found that medical treatment had failed to the extent to require bladder irrigations.

I remember once treating a severe infection of the pelvis of the kidney and bladder and when every other remedy had failed I used 1/20 grain tablet of calcium sulphide every hour to the point of saturation. The effect was excellent and in the course of a few days the condition had greatly improved.

On two occasions I have been deceived in cases I believed typical of pyelitis and cystitis. They were secondary to cancer of the colon and treatment was of no benefit.

CHAPTER XXIII

THERAPEUTICS

It is a very difficult matter to teach physicians that the aged require different medication than that employed in treating younger persons. "In maturity nature tends to cure while in senility nature will kill." In other words while there are many conditions in maturity that nature will cure, in the aged we must be on our guard or the patient will die before we have an opportunity to give much medication.

A man, aged sixty-two, was taken suddenly ill with a pain about the heart. He had never been ill before and it was apparent that the condition was due to the heart. A mistake in calling the condition gastritis probably cost the old man his life for in one hour he was dead. Had he received a hypodermic injection of nitroglycerin the probabilities are he would be living today.

A woman, aged seventy, was taken ill with symptoms of acute gastritis. The pain was severe and her physician gave her a hypodermic injection of morphine. In fifteen minutes she was dead. Undoubtedly the effect of morphine on the respiratory center caused her death.

These two cases illustrate the danger in dealing with old persons. From some condition apparently simple they will die before you return to the office and it will humiliate you because perhaps you have given a favorable prognosis.

The diseases of senility require as much special attention as that given to children. In senility we must not only employ different remedies but must use them in dosages different from that used in maturity.

Again, it is not the primary effects of the drugs we must observe, but the elimination through the emunctories is so deficient that we get an accumulation of the drugs in the system causing secondary effects which are fully as important as the primary.

For example, in employing heroin for pain, two or three days after administering it, we get a drowsiness and other symptoms due to the heroin. With alcohol it is the same. We use it and the old person's tongue remains moist and as long as this moist condition is present we are safe in using it. After a few days in administering alcohol we may notice the tongue has become dry and the mouth is parched. This is undoubtedly due to the cumulative effect of the alcohol and if we do not discontinue its use harmful results will follow.

Alcohol is an excellent remedy in the aged and makes an excellent food for them. Most aged people feel that they must have their whiskey and it is not well to countermand it. Allow them the amount they are in the habit of taking daily because to stop it, no matter the illness, may lead to disastrous results. Alcohol forms one of our best weapons in treating the aged, especially where there is much debility. I usually administer it to its full physiologic action, that is, until the cheeks become red and the mouth becomes parched. In pneumonia or even in some forms of chronic nephritis where there is extreme weakness, it is of value.

Many aged people take a certain amount of alcohol daily and if they become ill the family believes it should not be continued. A safe rule with the aged is not to interfere with any habits they have formed no matter how undesirable they may be. Habits that have been their custom for years should not be tampered with.

A great many indications can be found by observing the condition of the tongue. If the tongue is red and the

papillae prominent, it is an indication for nux vomica and hydrochloric acid and if the papillae are very prominent, arsenic in some form is indicated. Give two minims of Fowler's solution or a tablet containing 1/200 grain of arsenic trioxide, before each meal.

A red tongue indicates gastric irritability and hyperacidity. It is a peculiar therapeutic fact that hydrochloric acid will relieve this hyperacidity. Why acids check acids is difficult to explain, but probably when the glands of the stomach are overworking and causing an increase in acid, the ingestion of acid in the form of medication will supply the stomach with the normal amount and make glandular hypersecretion unnecessary. Do not give hydrochloric acid after meals, however, or it will cause hypersecretion.

The opposite rule works out. If the tongue is coated, it indicates an alkaline condition of the stomach and an alkali is required. If there is a white fur on the tongue, give one drachm of milk of magnesia every hour for three hours, then stop three hours, after which a similar dose is given for three hours. If there is a very thick coating on the tongue, it is well to give either mercury in the form of calomel or podophyllin given in tablets containing 1/40 grain every three hours. Two teaspoonfuls of the compound solution of sodium phosphate may be given in place of the milk of magnesia. If the stools are dark, podophyllin is indicated, while if light or putty-like in consistency, calomel is necessary.

Tic Douloureux

This painful condition will often yield to the use of the elixir of iron, quinine and strychnine phosphates, one teaspoonful given every three hours. Sometimes pyramidon in five-grain doses or butylchloral hydrate may relieve it. I have obtained excellent results in this condition by the use of a diathermia treatment given by a Telatherm ma-

chine. One electrode is applied over the painful area and the other on the opposite side. A treatment is given three times a week for one-half hour each time.

Senile Debility

This term is commonly used when we do not know what the matter is. Senile debility is usually termed "old age" and physicians are apt to say that the disease is due to "old age" and that nothing can be done for it.

Senile debility is usually due to some form of toxemia such as intestinal or renal. As long as this toxemia exists it is useless to give any tonic, but when the toxines are eliminated we can then employ tonics with great benefit.

The elixir of iron, quinine and strychnine phosphates given before meals is an excellent remedy. Again, we can use the elixir calisaya or tincture gentian with 1/60 grain tablets of strychnine sulphate every three hours or three times a day. Continued use of strychnine, however, is apt to hasten cardiac degeneration. The latter is a normal condition in the aged and if we stimulate with strychnine we are simply hastening degeneration of the heart muscles.

Doctor I. L. Nascher conceived the idea that amorphous phosphorus in gelatin coated tablets would answer indications for treating senile debility, and I have seen excellent results in its use. One or two grains of the amorphous phosphorus is prescribed three or four times a day.

Amorphous phosphorus may be combined with arsenic, and strychnine. Arsenic iodide also can be used in 1/30 grain doses. Arsenic works well in the aged and if there is any specific condition of the blood, the addition of the iodide may help.

I have used for some time diathermia treatments in senile debility. It is given by means of an autocondensa-

tion chair and through the two poles of the Telatherm machine from 400 to 750 milliamperes are given for one-half hour. This seems to revive them and the stimulation is of great benefit to them.

Use of Opiates

Morphine is a rather dangerous remedy for the aged and cases of sudden death have been reported from respiratory failure following a hypodermic injection. If morphine is necessary, it should be combined with atropine sulphate, 1/50 grain. Atropine combined with morphine prevents fatal action on the respiratory center.

In the aged we often obtain results diametrically opposite to the effect seen in younger individuals. For example, sometimes morphine will make the patient maniacal and he remains wide awake. Again, the secondary effect may come several hours after the primary effect and is more pronounced than when first administered.

I use very little morphine for the aged. They are apt to beg for it especially by saying that they do not sleep at night. However, the cause is that they fall asleep in their chair during the day and when night comes they can not sleep.

There are very few conditions in the aged that can not be taken care of by heroin or codeine. Codeine works well with the aged and I have senile patients who have taken 1/4 grain of codeine every night for years. It seems to be a necessity for some of these patients and relieves them of pains that prevent them from sleeping.

For pain in the aged, whether due to gastrointestinal disorders or accidents such as fractures and contusions, codeine will usually relieve them satisfactorily and there is very little danger of forming a habit or requiring a great increase in dosage. Codeine will not produce the

disagreeable effect accompanying the use of the stronger opiates and usually does not give them the unpleasant dreams experienced with morphine.

Heroin or diacetylmorphine will usually relieve pain if it is not too severe. It can be used hypodermically in doses of 1/24 grain and can be repeated frequently until the desired effects are obtained.

Heroin does not lock up the secretions and excretions as morphine does and it can be employed indefinitely for several years. I have a patient who has a cancer who has taken ¾ grain of heroin every night for the past three years. One fact which should be remembered is that opiates taken for the relief of pain rarely cause a habit and it is only when they are employed for sleeplessness and the like that they are dangerous.

In peritonitis and other painful conditions I have used opiates in huge doses yet the moment the disease abates the patient does not ask for, nor require, any further administration of the narcotic.

The Use of Coal Tar Derivatives

It is very dangerous to employ these derivatives in the aged as they are apt to cause great depression to the respiratory center and may cause cyanosis. They are seldom required and when it is absolutely necessary pyramidon is the safest form to use. Pyramidon does not contain the dangerous HCN radical that is found in acetanilide, acetphenetidin and antipyrin. In pneumonia and other conditions where an antipyretic is required quinine will usually answer the indications.

Quinine is a very valuable remedy in the aged and if the kidneys are in good condition and there is no albuminuria or hematuria, it may be used with safety. In facial neuralgia and headaches, neuritis, in pneumonia and especially senile debility, quinine is indicated. In senile debility quinine sulphate given in doses of one

grain every three or four hours is one of our best remedies. Quinine works well in most senile conditions and is an excellent stimulant. In extreme debility there is no better combination than quinine and strychnine.

Alteratives used in senile cases are usually undesirable because of the bad effect they have on the stomach. The iodides especially are harsh on the stomach. There are very few conditions, however, that require the use of the iodides. Even in syphilis arsenic usually works better in the aged than the iodides.

Arteriosclerosis is the normal process of advancing years and does not usually require the iodides except in those cases due to syphilis.

For constipation special remedies are required because the weakened condition of the intestinal muscles causes lack of peristalsis and remedies usually employed in maturity do not work satisfactorily in the aged. Aloin is an excellent peristaltic stimulant as is also cascara and the bile salts. An increase in dosage becomes necessary in time.

The secondary effects of drugs are important considerations in the aged. Belladonna when used with cathartics gives a secondary effect which is noticeable several days after the drug is taken. The secondary effects of digitalis, strychnine and arsenic should be watched. We may get a secondary effect of aloes or aloin on the pelvic vessels. The secondary effects of iron on the intestines and the role played by calcium hastening senile sclerotic changes are extremely important.

In senile cases the rule for dosage is to decrease depressants and increase stimulants. We must always stimulate the aged when they are ill because nature tends to bring death to their door.

It is surprising how small the dosage can be in the aged. Strychnine in 1/120 grain doses sometimes acts better than larger doses. Occasionally the smallest doses

of calomel will cause diarrhea and salivation. Digitalis has been a very unsatisfactory remedy in some senile cases in my experience and it is only in well selected cases that it will help. Small doses of the fat-free tincture, say three or four minims for a dose are usually sufficient, but the secondary effects should be watched. The old rule "children and the aged can not stand large dosage" is in a measure true.

Support the aged heart in illness with small doses of strychnine sulphate and increase the dose if necessary. If the pulse is irregular, give 1/40 grain of sparteine sulphate every three hours. If there is cardiac distress, if the pulse is bounding and the temporal arteries are tortuous and pounding, give 1/100 grain of nitroglycerin hypodermically or a small dose of erythrol tetranitrite. A good combination in bronchial asthma or any extreme cardiac distress is a hypodermic tablet containing morphine sulphate grain 1/6, strychnine nitrate grain 1/60, and nitroglycerin grain 1/100. This can be used with comparative safety. If there is much general edema with an irregular heart action, give a dessertspoonful of Trousseau's diuretic wine every three hours. This contains digitalis in such a combination that it does not give the untoward effects when given alone.

Watch the heart and not the pulse. Sometimes the pulse will be very good and regular and the patient will die in ten minutes. Owing to the sclerosed condition of the radial arteries, it is unsafe in most cases to depend upon the pulse rate or quality. Follow the heart beat with a stethoscope and count the respiration. In the aged it is almost a crime not to count the respiration, for many times it is the only way of detecting pneumonia and frequently the respiration will become of poor quality before the heart fails in its work and we are able to get a warning in this way.

CHAPTER XXIV

THE CHECKING OF HEMORRHAGE, SECRETIONS AND EXCRETIONS IN THE AGED

Case I.—A woman, aged sixty-five, had eczema which manifested itself on the arm, legs and chest. There was an exudate on the surface of the skin but under treatment the condition improved and at times the eruption would entirely disappear. When the oozing was checked or when the eruption entirely disappeared she always had a severe attack of asthma.

She would find relief from this in a few hours, but complained of headaches, dizziness and a sense of pressure in the check which would remain several days. Suddenly the eruption would reappear and she would immediately find relief from her suffering.

Case II.—A woman, aged seventy, complained of darting pains in the arms and legs, a severe backache and headache. She had edema of both legs and a general feeling of malaise and would remain in this condition for several days until an ulcer appeared on the leg which seemed to give her relief within a day or two. These ulcers were very painful and were always accompanied by an intense redness in the surrounding tissues. In the center of the ulcer there formed a black area which would take several days to separate from the sore.

Every kind of treatment seemed to make the condition worse, ointments were like poison and dusting powders would cause the sore to heal too rapidly as evidenced by various symptoms. The only treatment that seemed to agree with the patient was a wet dressing with a small

amount of the alkaline antiseptic solution in a few ounces of water. In this way the sore would not heal too rapidly and it would take three or four months for it to heal. During this time she would feel much better and when the ulcer had apparently run a certain course it would heal without causing any untoward symptoms.

For several months she would be free from the ulcers and uncomfortable feelings, but in time similar symptoms would reappear to be relieved only by the eruption of a sore, sometimes on the finger, once on the face and sometimes on the legs. These ulcers were of the trophic type and not due to syphilis or tuberculosis. I have seen this patient very ill for several days and on one occasion felt that death would soon come unless nature caused one of the sores to appear. Before the illness would come to a fatal point an ulcer would appear which would give her relief in a short time.

I have seen several cases similar to this, but due to tuberculosis and not to the simple trophic type as described in this case. Tuberculous sores are very common in the aged and if healed too rapidly will produce bad results. A tuberculous bone disease which discharges through a sinus may be compatible with good health as long as it is not disturbed and not healed. Ulcers of any kind should be treated in the same manner and not allowed to heal too quickly. There is a discharge from all of these ulcers which seems to eliminate a toxine of some kind and as soon as it is healed untoward symptoms are noticed.

A discharge from the ears or a chronic rhinitis in the aged should not be checked, in fact, a safe rule in senile cases is not to check any secretion or excretion. Epistaxis should be treated with ice on the neck and not by any method that will suddenly stop the hemorrhage.

Excessive perspiration in the aged is very disagreeable, but is not common because the skin of the

aged is atrophic and very dry as a result. However, we meet cases of excessive perspiration, either general or localized, and in the night the perspiration, together with the getting out of bed because of nocturnal micturition, cause a very uncomfortable coldness. This excessive perspiration is often a symptom of nephritis and rids the system of urea. If the condition is checked the kidneys do not respond to their increase in work and there is a congestion of the respiratory and other internal organs as a result. It is often a very serious matter to check this excretion and no matter how disagreeable the condition it should not be disturbed.

Any form of skin disease in the aged which has a discharge should not be treated with the view of healing quickly. I have seen many cases of senile cancer especially of the breast which would not apparently interfere with an old person's general health for several years as long as the discharge, no matter how offensive, was not checked. As long as there is free drainage and no treatment instituted which was too healing, nature seemed contented to allow the patient to live comfortably. On the other hand, an ambitious surgeon, one who believes that the cure of any abnormality consists in its removal from sight, would remove the cancer and as a result the patient would rapidly fail and die within a short time. Radical interference in these cases should be very carefully considered before being resorted to.

Checking a diarrhea in senile cases is also a dangerous procedure because, like excessive perspiration, it is frequently a symptom of nephritis or may be due to any form of toxemia, it being nature's effort to rid the system of certain poisons. It can be readily seen that a checking of this diarrhea would produce bad results and sometimes lead promptly to a fatal issue. If it becomes necessary to check the discharge, for example, in cases where there is extreme prostration as a result, give a

remedy to check the bowels, administered only after every second or third movement. In this way the excretion will not be checked too rapidly and there will be but little danger associated with it. Sometimes the diarrhea will be a symptom of cancer of the bowel, and it should not be checked. I recollect seeing an old man who had a chronic diarrhea for several years and a physician checked the diarrhea and the old man died in three days.

Excessive excretion of any kind in the aged is very uncomfortable and many old persons consult you to ask you to check it for them. In the aged these excessive excretions and secretions are usually caused by a compensation to some other function. For example, a diseased kidney which is unable to carry on its work may depend upon the skin or bowels to carry on a part of its function of elimination. As a result nature changes the channels of elimination and in time this change in function is in fixed paths, in other words, a perverted function in time assumes an action normal to itself. To interfere with this would cause extra work to be placed upon the diseased organs which are not able to carry on any additional work. Frequently, hyperexcretion from the kidneys is a symptom of parenchymatous nephritis.

Bronchitis and other diseases of the respiratory tract often produce excessive bronchial secretions in the aged, but as long as the secretion is not checked there is no discomfort. By checking the secretion an attack of asthma may result.

Fistula-in-ano in the aged is often of a tuberculous nature and the discharge may be serous, purulent and of a fetid character. I have seen several of these cases which have been operated upon by surgeons and the result of healing and checking the discharge has produced a general feeling of discomfort and loss of weight. One case I remember a man lost twenty-five pounds as a re-

sult of a cure of the fistula and he has never seen a well day since. We must not forget that it is not always the object in the aged to heal or correct an abnormality. Frequently, as with fistula, nature seems to use the disease to rid the system of some toxine and as long as it is not disturbed they remain in good condition.

We are frequently confronted with a hemorrhage in the aged which we think should be checked. It may be epistaxis, acute or chronic hemorrhage from the bowel, hematuria or metrorrhagia. In any event unless it appears that the hemorrhage may cause death it is far safer not to check it immediately. A chronic hemorrhage from the bowel may be due to cancer or diverticulitis, but in many cases it does not seem to interfere with the well-being of the patient. However, to check it will cause untoward symptoms. Likewise, hematuria should not be treated with the intention of rapid cure and in many cases I did not treat it at all and the patient lived a long time without any discomfort.

A woman, aged sixty-five, sent for me because she had a hemorrhage from the vagina. Several years ago she had a cancer of the cervix removed and had observed no trouble since. Suddenly, without any warning, she had a hemorrhage which later proved to be due to a return of the cancer. In this instance I did not check the hemorrhage and in a short time with rest in bed it stopped and to the time of her death there was no recurrence of the bleeding.

It seems to me that we may safely make the rule that all secretions and excretions in the aged should not be checked unless an extreme emergency requires the checking of a hemorrhage.

CHAPTER XXV

DIAGNOSTIC ERRORS IN THE AGED

A man, aged ninety, complained that he was unable to sleep at night. His daughter showed me a tube of hypodermic tablets containing ¼ grain of morphine sulphate which his family physician had given to him upon his request for a soporific. Upon questioning the daughter I found that the old man slept in his chair several times a day and when night came he naturally could not sleep. When his daughter told him the real cause of his insomnia he became angry.

The aged usually deny having slept. An aged lady sent for me to come at night to give her a hypodermic for her pain. When I arrived she was sleeping and on awakening she asked for the hypodermic injection. When I went into another room to arrange my hypodermic outfit she fell asleep and I left her this way without administering a hypodermic.

The aged do not realize the amount of sleep they get and they all make the same complaint; that is, that they can not sleep. A placebo will make them sleep as well as morphine, in fact better, for morphine usually makes them more awake.

The aged are apt to falsify symptoms in order to excite sympathy and they may have every symptom everyone else has. An old lady told me that she had taken six ¼ grain tablets of codeine sulphate at night without any relief from her pain in the leg. As a matter of fact she had not taken any tablets and probably had no pain, but as a physician was coming to the house to see another

patient she felt it no more than fair that she also have attention.

We must be on our guard, however, and not attribute too many symptoms to malingering for I once had an old man whom we believed was malingering, but when he suddenly died from uremic convulsions we saw our grave mistake.

Pain in the aged is not a safe symptom to measure. Sometimes owing to decreased nerve sensibility we may find appendicitis, peritonitis or strangulated hernia without any pain. Pain is a very uncertain symptom. Many cancers of the gastrointestinal tract are painless, but on the other hand a senile basal-cell carcinoma of the skin which has been painless for a long period of time as age advances becomes more painful. We may have pneumonia without pain in the chest and many fractures are painless and a mistake could easily be made in diagnosis.

A diagnosis of arteriosclerosis or calcareous degeneration of the arteries has little significance in the aged. These are normal senile changes and many symptoms ascribed to this condition, are due to other causes.

It is very unsafe to depend upon the pulse rate or the quality of the pulse because of the sclerosed condition of the radial arteries. Many old persons will have an excellent pulse yet they may be dying. Always count the pulse rate from the heart with a stethoscope.

Counting respiration is a necessity and without it many cases of senile pneumonia will escape notice because the disease does not give many manifestations.

Many cases of so-called senile pneumonia are in reality congestion of the lungs. The best way to diagnose pneumonia is to know that the person is too sick to have senile congestion of the lungs.

Many cases of uremia and autotoxemia are called typhoid fever. In the aged the latter disease is very rare. I have heard physicians make a diagnosis of typhoid fever in the aged, but believe if the true cause was ascertained a toxemia would be found the cause. Uremia oftentimes causes a fever and every other symptom of typhoid and if the patient has the strength to withstand the severity of the attack, it will run a course similar to typhoid and take about three weeks to abate. From the appearance of the tongue to the low muttering delirium and cold, clammy perspiration, the disease has the appearance of typhoid fever. Many times it is associated with an acute inflammation of the kidneys and if casts and blood are present in the urinary sediment, death is almost certain.

Again, intestinal toxemia may produce the same symptoms and present the classical picture of typhoid. I recollect a man who had frequent attacks of a fever of this kind and the temperature remained about 103° F. for several days, then abated. If the true cause of the affection had not been discovered and treatment had been given for typhoid fever, the patient would probably have succumbed. Pyelitis also may cause similar symptoms and easily be mistaken for typhoid fever. Chills are not common in cases of senile pyelitis, but a high fever with prostration is very common. Some cases of pyelitis and pyelonephrosis are in reality due to cancer of the colon. I remember a man who had a typical clinical presentation of pyelitis and was treated accordingly. He did not respond to treatment and on further examination it was discovered that he had a cancer of the colon. One night he was taken suddenly ill with very severe pain in the right side and died in two hours. I knew a woman who had been suffering from nephritis and pyelitis. In time she developed symptoms of gall stones, was operated

upon and a cancer of the liver was found. In this case the nephritis was secondary to the cancer of the liver.

Senile glycosuria may be due to senile degenerative changes and not due to diabetes. The aged do not usually develop acidosis except in coma from some other disease. For example, uremic coma may have a tendency to form acidosis. Much care must be given to the diagnosis of diabetes in the aged because injudicious treatment may cause fatal results. It has been said that ether, chloroform or nitrous oxid may cause an acidosis and this should be borne in mind in anesthetizing patients. It is a great mistake to call senile glycosuria due to a normal process of degeneration, a true diabetes.

In examining senile patients they are apt to tell you they have not experienced certain symptoms because they believe it will prevent a painful and disagreeable examination. In taking the history they will deceive you, perhaps, unintentionally, because they forget, do not observe, and therefore will tell you something that is not correct.

History-taking in the aged is very uncertain. For example, I asked an aged woman in a hospital how frequently her bowels moved. She was much disturbed by this remark, because she said that everyone's bowels should move every day. A case like this is typical of a woman who does not have a bowel evacuation oftener than once a week. They will ask to take their own laxative pills in order to prevent you from prescribing a laxative. Sometimes from fear of pain from hemorrhoids they will falsify about their bowel movements and say that they have been very regular in this respect.

I have found tumors in the abdomen of aged patients when making a routine examination and as they experienced no symptoms I did not tell them of this condition. On several occasions I have followed these cases for

several years and found that the tumors did not produce symptoms. It would be a grave mistake to worry them with this when it is not necessary. I now have a patient, a woman, aged seventy, who has had a cancer of the breast for the past three years. It does not enlarge nor does it cause her any symptoms, not even loss of weight. She does not know that it is a cancer and she is contented.

Another woman, aged eighty, had a carcinoma of the breast for several years, but it did not cause her any trouble. Nature had protected her well and she was in comparative comfort. An ambitious surgeon operated upon her and she died a few days after the operation. I believe she would be living today but for the mistake in judgment on the part of the physician. Surgeons make a great mistake in believing because an abnormality exists it must be removed. Many old persons have some apparently serious affliction such as cancer, but there is a compensation on the part of Nature that keeps them comfortable, provided no one tampers with them.

In my experience the most common cause of mistake in diagnosis in the aged is in cases of interstitial nephritis. The latter condition is very difficult to diagnose at times and is capable of deceiving us to the extent that we may get symptoms in another organ as the only symptom of the kidney disease.

For example, we may have indigestion, gastrointestinal pain, neuritis, neurasthenia or psychasthenia due to nephritis. I am convinced that the symptoms in half the cases commonly called senile pneumonia are in reality due to an acute exacerbation of a chronic nephritis. Lung symptoms and heart manifestations are commonly due to nephritis. We depend too much upon chemical urinalysis when we should depend upon the microscope for the diagnosis of kidney disease.

Tuberculosis in the aged is not infrequent but does not usually cause symptoms and is discovered, usually, only at postmortem examination. Nephritis with lung symptoms frequently simulates pulmonary tuberculosis. Senile debility from any cause frequently looks like phthisis and senile bronchitis may have every appearance of a miliary form of tuberculosis. The latter disease often complicates diabetes in the aged, but does not usually cause symptoms. Tuberculous ulcers may appear especially on the skin over the ends of long bones.

Deafness in many senile patients is not due to the ears primarily, but due to the diseased condition of the kidneys. I am firmly convinced that nephritis plays an important role in deafness and a temporary deafness lasting an hour or two is one of the first symptoms of nephritis.

Hepatic colic is not common in the aged although gallstones may be present. The decreased sensibility of the nerves in the aged makes it possible to have the passage of a gall stone through the ducts without pain. Renal colic, on the other hand, is quite frequent in the aged and is usually attended with great pain requiring opiates for relief. Renal colic may be mistaken for the gastrointestinal pain due to nephritis or may seem like a crisis of locomotor ataxia. Pains which have been described as due to arterial spasm may effect the kidneys and simulate renal colic. An attack of renal colic may not be followed by another attack for several years.

Hematuria is common, but does not always signify nephritis. It may be of unknown cause and be compatible with good health in many cases. Hematuria is very frequent in the aged and frequently is due to prostatic congestion. It is not usually of serious omen and even if it does not improve it is usually of little detriment to the health of the patient.

Skin diseases in the aged are usually due to lack of nutrition due to the narrowed lumen of the arteries in their sclerosed condition. Senile pruritus may be parasitic in origin. Eczema may be due to diabetes or nephritis and psoriasis is frequently associated with asthma in the aged. I have seen a few cases where interfering with the skin condition brought on an attack of asthma.

Rheumatism is commonly due to nephritis. I think the vast majority of cases of senile rheumatism can be traced to renal toxemia and sometimes it is the only symptom of nephritis. I have been impressed in many cases commonly attributed to senile rheumatism and gout to find that by urinalysis there was an underlying disease of the kidneys causing a chronic uremia. An eliminative treatment and proper diet may cause a great improvement in the condition. Dr. S. Solis-Cohen was very fond of asking his students the following conundrum, "When is rheumatism not rheumatism?" The answer was, "Nine times out of ten." This applies to senile rheumatism. Many of these aged persons have been given the salicylates in some form which produced bad effects on the kidneys and stomach. As the eliminative treatment was indicated and not the salicylates, the mistake in diagnosis was serious. This does not apply to cases of rheumatoid arthritis, but to the forms most commonly seen in patients who have a so-called rheumatic or gouty diathesis. Diabetes is also a frequent cause of rheumatism. In fact, the disease frequently manifests itself by sciatica and so-called muscular rheumatism. Again, syphilis is frequently a cause of rheumatism and in these cases a diagnosis is very important in order to institute proper treatment.

The pancreas in the aged may cause disease, but unfortunately very little is known today of pancreatic disease. I have observed in several cases of senile disease,

such as diabetes, senile gangrene, etc., that there were definite symptoms pointing to the pancreas. The most frequent symptom is the presence of fat in the stools.

Carcinoma of the gastrointestinal tract is easily overlooked as it frequently causes no symptoms. Again, we may have every symptom of carcinoma yet a roentgen diagnosis would be diverticulitis. Frequently the latter condition will cause blood to appear in the stools. Cancer of the stomach is frequent while gastric ulcer is rare in the aged. The scirrhus type of carcinoma in the aged is very difficult to diagnose at times.

Tic douloureux may be due to an unerupted molar tooth. I recollect finding this condition in a man aged fifty-six and a dentist told me he discovered it in a man aged seventy-five. Neuralgia is frequently due to anemia and also toxemia and neuritis is a frequent symptom of renal or intestinal toxemia.

Vague symptoms of neurasthenia or psychasthenia may be due to lack of sexual comforts. I have a patient, a man, aged seventy, who was gradually failing and I could not discover the cause. He finally confessed that he required a sexual companion. He also complained of a large, painful testicle which he said was always relieved by sexual intercourse.

The most frequent mistakes in diagnosis we make, however, are due to an ignorance of the normal senile state. Trousseau said, to know the natural course of disease is to know half of medicine. We commonly say that a senile condition is due to arteriosclerosis and calcareous degeneration of the arteries. Sclerosis is a normal senile degenerative process and we must not overlook the fact that a person normally has arteriosclerosis in senility and that degenerated organs may work in harmony. As long as the harmony is not broken these degenerated organs functionate in a way which is normal to themselves.

To call the normal senile degenerative changes a disease is a mistake and is apt to lead to many disastrous results in therapeutics. For example, iodides for senile arteriosclerosis would not only produce severe gastro-intestinal symptoms, but may produce a severe irritation of the kidneys.

CHAPTER XXVI

SENILE MALINGERING

A difficulty frequently encountered when dealing with senile cases is the determination of the pathologic condition which gives rise to the symptoms present. In many cases the subjective symptoms, the objective symptoms and the physical signs do not harmonize, or the physician, not familiar with the normal senile changes, finds a senile emphysema, dilated stomach, visceroptosis, or hypertrophied prostate and ascribes to one of these the symptoms present. More often the subjective symptoms point in many directions and in the absence of objective symptoms the physician does not know what to look for.

The difficulty is increased when we remember that the aged frequently exaggerate symptoms, especially pain, while owing to the weakened mentality and the changes in the skin and the nerve terminals, pain is often absent in ordinarily painful diseases; that the aged are imitative and readily influenced by suggestion; that the normal senile changes may cause distress; that a pathologic condition may have existed for so long a time that the organism has accommodated itself to such abnormal condition and it has become normal to the individual.

The most frequent form of malingering is the exaggeration of pain to secure sympathy. The following is a typical case:

A man, age seventy-two, says he was never sick (has pock marks on his face and marks of a scarifier on his back). He complains of feeling sick all over. He says he has headache, backache and pain in the joints, feels cold and has no appetite. There is a history of constipa-

tion, slight incontinence of urine and dyspnea, going back for months or years. There is no cough or expectoration, no palpitation or other cardiac symptom, but a history is obtained from the family of occasional attacks of vertigo, which he denies, a presbyopia and evidently presbyacusia.

The subjective symptoms did not point to any clearly defined disease except cerebral atheroma if we accept the statement of the family as to vertigo. Neither did the objective symptoms give any clew. He was irritable and insisted that his family leave the room while he was being examined.

Examination.—Temperature rectal 98.6, mouth 97.6. Blood pressure systolic 170. m. m. Urine, S. G. 1020, trace of albumin, indican, no casts. Chest showed senile emphysema, heart hypertrophied, no murmurs. Tortuous temporal arteries and filled superficial veins, varicose veins in legs. Abdomen tympanitic, stomach dilated, liver atrophied, spleen not palpable, prostatic hypertrophy. Upon pressing over various parts of the body he gave no evidence of pain but says it hurts when he is asked if there is any pain. It was possible to exert considerable pressure upon such parts without evidence of pain if his attention was distracted in conversation. He forgot the location of a painful spot on the back a few minutes after complaining of this pain and pointed to a spot six inches away. Considerable pressure upon the knees during conversation brought out no evidence of pain until I called his attention thereto when he immediately winced and pushed my hand away. Before leaving him he requested me to suggest to the family that he be sent to a hospital or home. His family informs me that he did not complain of being ill until shortly after a petty quarrel.

This was a case of pure malingering to obtain sympathy.

In some cases the dread of pain makes the patients hypersensitive and they suffer acutely from a slight les-

ion as a scratch or bruise. In one case of chronic ulcer of the leg the patient trembled when I approached her with a forceps to remove the slough and screamed when she saw me lift it out of the ulcer, yet when the bed covers were so arranged that she could not see what was being done she gave no evidence of pain. Suggestion and unconscious mimicry are frequent causes of malingering. In a small home for the aged one woman had a senile pruritus. Several other women in the ward seeing this one scratch did likewise, each accusing the first of having lice. It was necessary to remove the one woman and subject the others to a bath. The suggestion of itching is often sufficient to create the impression and sensation of pruritus. Malingering due to unconscious mimicry is seen occasionally in homes and institutions where inmates pair off with companions. If one has some form of tremor, impediment in gait or speech, or makes peculiar movements of the body or limbs, the companion will frequently acquire the same. In a case that had been diagnosed and treated as Parkinson's disease, there was the gait, attitude and the mask-like expression of this disease. The rapidity with which the symptoms developed after the patient began to associate with a true case of paralysis agitans led me to question the diagnosis. The men were separated and the malingerer was threatened with an operation if he did not stand erect and control the tremor. The threat produced the desired result and the facial aspect changed when he was placed with a cheerful companion.

I have seen a senile tremor and a hemiplegia, acquired through unconscious mimicry, cured through separation from the original cases, but threats and actual deprivation of food were necessary in the senile tremor case. In this case the food was taken away whenever he spilt any from his spoon or cup and tempting dishes were offered which he could have only if he completely con-

trolled the tremor. He would lapse into the tremor when he thought he was not watched, but a word from the attendant sufficed to cause him to control himself. He was finally completely cured.

A lisp which an aged couple acquired from a lisping grandchild living with them was not cured until the grandchild was cured. Nothing was done in this case, as the old people imitated the child in its talk and as the child's speech improved the grandparents dropped the lisp.

It is generally difficult, sometimes impossible, to cure these habits in the aged. Abnormal motion habits are quickly formed. A few days' companionship with a person who limps will suffice to cause the companion to limp in step with the other and it will take many days or weeks to cure him. Sound or voice habits develop slowly, but once acquired it is almost impossible to completely cure them unless the imitative propensity is stimulated in the opposite direction. The lisping couple to which I referred were thus cured.

The term malingerer can hardly be applied to a class of senile cases where the opposite condition prevails, where obvious symptoms and signs are denied. The aged frequently boast of their good health and wonderful constitution and they will deny ailments and discomforts that are obvious or usually painful. On the other hand they will exaggerate former ailments from which they recovered "in consequence of their strong constitution."

In the case quoted at length the patient denied smallpox in spite of the pock marks and he denied any pulmonary disease though the scarifications were probably produced as a blood letting measure in pulmonary disease.

The histories as given by the aged are generally unreliable, their statements being almost invariably exag-

gerated. This applies to past as well as to present conditions. In a few cases pathologic states and symptoms are minimized. The discerning physician should be able to distinguish between exaggerated symptoms to obtain sympathy and minimized symptoms, though it is often difficult to determine if the patient's denial of symptoms arises from weakened mentality, local degenerations involving sensory and other nerves, fear or a foolish exhibition of fortitude.

Surface sensitiveness is generally lessened in the aged, while the pain in inflammation of internal organs and tissues is felt less acutely on account of mental impairment which is more marked in inflammation with high temperature. On the other hand the dread anticipation of a painful examination will cause the patient to hide lesions and deny painful spots, fearful that the physician will make a closer examination of the same.

A patient, aged seventy-five, gave a history of having struck his shin on the edge of a car step about a month before I saw him. He said nothing about this at home, but the family noticed that he bandaged his leg and found dried blood and pus on one of the bandages. The patient declared it was nothing, it did not hurt and there was no need to call the physician. He still refused to have a physician when he was unable to walk and the removal of the bandage caused pain. It was through subterfuge that I was able to see the injury. It was an ulcer which extended to the periosteum, the ulcer filled with pus and slough and was surrounded by a wide ring of erysipelas. He denied having any pain but screamed when I touched the ulcer with a piece of cotton.

The problem how to deal with senile malingerers is often more difficult than the determination of their condition. It seems inhuman to subject an aged individual to a painful test, and more so to institute a painful method of treatment when that method has for its pur-

pose the production of pain or distress. The family will ask what harm would result if the patient continues to limp or shake so long as these are only habits. Habits acquired in old age rapidly become worse and less controllable. The fine slight tremor which may be controlled in the beginning becomes an uncontrollable coarse and persistent tremor. The slight limp may become a complete monoplegia. Drugs are useless in these cases and harsh measures with constant watching are necessary to effect a cure. The conscious malingerers, who exaggerate symptoms, usually have a slight basis for their complaints and require medical treatment for the underlying disease, but where there is no basis for their complaint as in the case I described, a disagreeable placebo will usually suffice.

CHAPTER XXVII

VENEREAL DISEASES

A war veteran, aged seventy, consulted me for an ulcer of the leg. He complained of symptoms which were due to prostatic congestion and he was apparently toxic. About fifty years ago he was infected with syphilis and had tertiary lesions on the leg. In time they healed and he has not experienced any inconvenience or return of symptoms for nearly fifty years. A small dose of arsenic trioxide, 1/200 grain, was given every four hours and in the course of a few days he was much improved. The ulcer was healing and the prostatic symptoms improved. While taking the arsenic I advised free catharsis because in the aged the secondary effects of drugs, owing to faulty elimination, are often more pronounced than the primary effects, and should be offset by the use of laxatives.

A man, aged sixty-two, was infected thirty years ago, but did not go through a course of treatment. At times he has attacks of ulcerative stomatitis which are relieved by the administration of 1/100 grain of arsenic trioxide before meals.

In senile cases, syphilis may be the underlying cause of many conditions. On the other hand, there are a great many old syphilitics that never experience any difficulty. Syphilitic ulcers in the aged are prone to have sarcomatous degeneration engrafted upon them. In a few instances I have been at a loss to know the reason why antisyphilitic remedies were of no benefit and in these cases I discovered that sarcoma had been engrafted upon the syphilitic sore.

I now have a man who has a large syphilitic tumor of the neck which has undergone sarcomatous degeneration. Mercury and the iodides as well as Salvarsan have been of no benefit to him and he has taken x-ray treatments and radium therapy, but remains in the same condition. The tumor does not spread and he has had it for several years. It seems that when a man gets old some of these sarcomatous processes are less malignant than in maturity. I have seen a few cases of carcinoma that have lived for several years and are apparently not failing. I believe the secret is that I do not interfere with them by surgical procedures which would be fatal in many cases.

The iodides and also mercury do not work as well as when given to younger persons, but are at times indispensable. To repeat, many of the best results in syphilis are from remedies other than mercury or the iodides. These remedies are very harsh on the stomach of an old person. I have not seen many encouraging results from Salvarsan when used in senile patients. Arsenic seems to be well-borne and may be given in the form of the trioxide or as Fowler's solution. If the bowels are free, we are not likely to get the cumulative action, causing secondary effects. Too much arsenic will produce symptoms similar to coryza and the lower lids will become puffed.

A combination of lime phosphate and iron phosphate, each two grains, given three times a day will benefit many cases of syphilis. If mercury or the iodides are used, small doses, one-fourth the usual dose, will usually be as effective as larger doses and will produce less disturbance to the stomach.

Gonorrhea is very rare in the aged as there is not only lessened opportunity but the senile organism is more resistant to infection. In several instances where old men were exposed to infection they escaped although younger

men who had been with the same women just before or immediately after the old man, were infected. The few cases reported in advanced life were almost without exception men who had had the disease in earlier life. The disease is very rare in aged females. The following are typical cases:

A Civil War veteran who attended the grand reunion at Gettysburg in 1913 visited a house in the village which he had visited during the battle. Here he met a woman with whom he had sexual congress, but he was intoxicated at the time and he did not know if she was old or young, a mulatto or a white girl. Upon his return to the city four days later he felt a burning pain when urinating, there was also some dribbling of urine and two days later he noticed a thick discharge which he recognized immediately, as he had had gonorrhea in his youth. The old man insisted upon the treatment that cured him on the former occasion, namely: Lafayette mixture and lead and zinc injection. The discharge ceased and the treatment was discontinued, but a few days later this discharge reappeared. In the course of a month there was some difficulty in urination, the stream emerging small, twisted and expelled with little force. The introduction of a sound revealed a stricture a short distance behind the meatus and this was treated by gradual dilatation, the treatment being continued for a month. During this period the urethra was washed out daily with a solution of permanganate of potash to which a small amount of glycerine was added. The profuse discharge stopped in a few days, but occasional drops of pus could be expressed for a few weeks afterward. By the end of the third month there was no more pus and there were no more shreds in the urine.

A man, aged sixty-two, virile and libidinous, boasted of his apparent immunity to veneral disease as he had escaped since his only attack of gonorrhea at the age of

twenty. In a spirit of bravado he visited a woman who had infected a friend. Within a week there were all the symptoms of acute gonorrhea and a balanitis increased his suffering. Gonorrheal vaccine was administered without any apparent effect and the treatment by injections and prolonged washing out of the urethra was instituted. After an initial irrigation of the urethra with a 5 per cent solution of argyrol, irrigations with permanganate of potash were made several times a day and the discharge cleared up in four weeks. The balanitis cleared up in a few days under local application of the alkaline antiseptic solution.

An elderly man had a mistress for several years and had unbounded faith in her fidelity. A few days after one of his weekly seances, he noticed a urethral discharge, but there was no burning or other symptom of the disease. The discharge was glairy and colorless, not at all like the creamy discharge of acute gonorrhea. The microscope revealed gonococci. The woman permitted vaginal and urethral smears to be made, but these did not show the pathogenic germs. The man had a varicocele and an enlarged prostate and the discharge resembled the discharge of prostatorrhea or an old gleet. The man had had gonorrhea during youth, but not since. It was impossible to determine the source of the infection and it was treated as gleet. Argyrol and later permanganate of potash solution caused disappearance of the gonococci but the glairy discharge persisted for seveal months and afterwards it occasionally appeared for a few days then disappeared without treatment.

The following case of gonorrhea in the female presents nothing unusual except the age of the patient. The woman, aged sixty-eight, was infected by her husband who was two years her senior. For two weeks she had felt a burning on micturition, but neglected it until the meatus became inflamed and the act of urination

caused intense pain. She had suffered from dribbling due to an atonic sphincter for years and ascribed the inflammation to "sharp" urine. There were slight vaginal and urethral discharges which under the microscope revealed the pathogenic organism. Argyrol tampons and permanganate of potash irrigations caused disappearance of the vaginal discharge in a few days.

Chancroid is extremely rare in the aged. The penis is shrunken, erections are weaker, and there is less likelihood of abrasion of the epidermis during intercourse. There is also greater resistance to pathogenic organisms. The following case is the only one that came to the attention of the writer. The man, a bachelor, aged sixty-five, was obliged to masturbate to arouse an erection before penetration. By this act he produced abrasions on the surface which furnished the point for infection. A few days after connection he noticed a slight swelling behind the corona and this became a pustule three days later. He opened the pustule, exposing an ulcerating base. After a few days of self-treatment he came to the physician. The ulcer was shallow, irregular, about the size of a small finger nail and covered with pus. The ulcer was cleaned and covered with a powder consisting of calomel and bismuth subnitrate. Cleansing the ulcer daily with peroxide of hydrogen solution and applying this powder caused a contraction of the sore and healing of the base, leaving a depressed but healthy surface. Slight induration of the inguinal glands occurred but they did not suppurate. The entire treatment lasted two weeks and the patient was then discharged cured.

I remember an aged man who consulted me for an urethal discharge that had every appearance of being gonorrhea. Upon careful examination it was found that the discharge was not gonorrheal, but due to diabetes

and treatment for this disease caused the discharge to disappear. Senile diabetes is frequently the cause of balanitis and treatment directed to diabetes will sometimes help the other condition.

CHAPTER XXVIII

THE SENILE CLIMACTERIC. A TYPICAL CASE

The following case is typical of the state described as the senile climacteric.[1]

A man, aged seventy-three, single, holding a political position involving some responsibility, but little actual work aside from checking and countersigning reports, etc.; has held this position for twelve years and for ten years before held a similar position in another department.

The routine duties of his position can be performed by a subordinate and his absence would cause no disarrangement in his office.

He is religious, abstains from alcohol and tobacco and has always been a stickler for observing the proprieties of social life. He was formerly cheerful, but never communicative, had many acquaintances but few friends and no intimates. While tactful and pleasant he was strong-willed, short and decisive in argument as in giving orders. He was exactingly methodical, neat in appearance and in surroundings, almost miserly economical, except in his expenses upon himself. He was at one time an officer in the army and preserved an erect, dignified bearing, reserved and reticent.

He had typhoid fever during the Civil War. Has had no serious illness since, but became morbidly depressed when his sister died and he remained away from his office for a few weeks. This depression passed away and no change in his mental or physical condition was noticed until about six months ago.

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1 The Senile Climacteric, New York Med. Jour., Dec. 2, 1911.

About six months ago, it was noticed that he was not as regular in his habits as formerly, neither as methodical or correct in his work, nor as careful about himself or his surroundings. His desk was littered with papers and scraps were thrown upon the floor instead of in the waste basket, clothes were thrown upon the chairs instead of being hung up, he preserved useless letters and papers, became peevish and complaining, forgetful, and occasionally dozed off at his desk. He now began to notice slight infirmities, aching in the ankles on walking, shortness of breath when going upstairs, palpitation of the heart when the door slammed or the head of the department approached his desk. He became occasionally dizzy, the vertigo lasting but a moment. Noticing cloudiness in the urine when standing overnight he consulted a physician who diagnosed chronic interstitial nephritis. The patient was now worried about his physical condition and watched for all sorts of somatic disturbances, frequently felt his pulse, looked in the glass to note any change in his appearance and made repeated visits to the physician. He felt that he was getting worse and changed physicians.

I first saw him three months ago. He presented an erect bearing, but would occasionally permit himself to sink into a slouching attitude with arms hanging loosely in front of him and with a slight stoop. He was restless, apparently fearful of some unknown danger. The skin was slightly weatherbeaten, but soft and showing the extreme care he had always taken of it. Physical examination showed no marked degenerative changes.

The principal change was in his mentality.[2] Here I was obliged to depend mainly upon the statements of his friends and neighbors. He had formerly been very reticent, now he frequently asked them if they noticed any

2 Senile Mentality, Intern. Clinics. Vol. IV, Series 21.

change in him. He sought their company and became talkative, his conversation being confined exclusively to his health and his work. He took no interest in any conversation which did not relate to himself. His conversation was rational and when he made mistakes in figures, names, places or dates acknowledged his mistakes when corrected.

The mental deterioration proceeded rapidly but irregularly, but he is now passing out of the climacteric period and entering the stage of senility with steadily progressing senile changes. During this climacteric period the memory became weakened and he supplied forgotten facts by inventions, insisting upon their correctness. These would be forgotten the next day and a new set of fabrications would be substituted while the statements made the day before were denied. The fabrications were rational. During this time a persecutory delusion developed. He began to worry about his position and thought that a certain subordinate might be selected to fill it. He conceived the pleasure of this subordinate and from this arose the idea that this subordinate was in some way responsible for his illness. Carrying this conception further, he believed that this man would have him sent to an asylum if he returned to work. When this stage was reached it was possible by suggestion to create hallucinations, that this subordinate had agents in his room to kidnap him, that men were watching him from behind a lamp post, etc. The persecutory delusion was sometimes forgotten while the hallucinations could only be evolved through suggestion when the delusion was present. He was loquacious when speaking of his own importance, but spoke guardedly and in evident fear of his supposed danger. Only once did he speak voluntarily of it; at other times I was obliged to lead up to the subject. If I broached it at the beginning of our conversation he usually denied any such fear, but after

prolonged conversation, casual references to this substitute in his office would develop the delusion.

He developed exalted ideas of his importance, exaggerating the value of his services, believing that his absence from his desk would seriously hamper the government. They are not, however, insane delusions such as appear in the paretic, but the opinions of the egotist. The fear that his absence would disarrange the routine of his office and he would be discharged became a persistent phobia. This was the only mental aberration which was constantly present and remained unchanged until he returned to work a few days ago.

During this period the mental attitude was sometimes depressed, agitated or apathetic, rarely cheerful. There were sometimes lucid intervals lasting for hours or days during which he was cheered by letters from his superiors, assuring him that his position was safe. Even at such times he would suddenly become depressed, call up his superiors on the telephone for corroboration of their letters and then doubt their sincerity. During these lucid intervals the patient's conversation was rational and he sometimes realized that he had said or done irrational things, but if conversation was prolonged it was possible by suggestion to arouse a persecutory delusion along the lines of the suggestion.

The usual mental attitude was agitated depression. In this state he sought listeners to whom he would explain how his absence from work hampers the government, and the fear of his discharge, he would repeatedly ask if his listeners could detect any signs of insanity, he frequently sent for me insisting that I examine his heart, blood pressure, urine, mental condition, etc. Another matter, several foolish infatuations following sexual recrudescence, added to his agitation and depression.[3]

3 Medico-legal relations of Old Age, New York Med. Jour., May 25, 1912.

Sexual recrudescence has been frequently noticed in advanced age, there being sometimes a prolonged, more often paroxysmal libido without functional potentia. It is in the paroxysmal form of recrudescence that an individual is driven by sexual fury, unrestrained by reason, to attempt rape, and a child being usually available the attempt is made upon the child. It is safe to say that most, if not every case of atrocious but unsuccessful attempt at rape upon a young girl by an old man occurs as a result of sexual recrudescence during the senile climacteric. When the recrudescence is prolonged the sexual stress is apparently not as great and the individual is more likely to become infatuated with one woman, than to attempt indiscriminate or forcible intercourse. Such infatuation may lead to a mesalliance and give rise later to medico-legal questions. In this case the main infatuation was apparently for a middle aged woman, who told him that she was married and living with her husband, yet consented to meet him secretly. During his rational hours he realized the folly and the immorality of his relations although declaring that there had been no sexual relations. At other times he spoke for hours about her charms, virtues, etc., carried her picture, stood in front of the house in which he thought she lived and met her by appointment. After some of these meetings or perhaps while watching the house, he became absent-minded, wandered aimlessly and twice crossed the river unconsciously. At one of these meetings he lost his month's salary and thereafter she failed in her appointments. These two matters, the fear of losing his position and his infatuation for the woman who failed him, kept him almost constantly depressed even when his mind was clear. A few weeks ago he heard that she was going to Europe and for several days he went repeatedly to the house in which he supposed she lived but failed to see her. He was extremely

agitated on the sailing day, kept her picture constantly before him, and said over and over again that he would never be able to see her again. A few days later he had apparently forgotten his infatuation for her and when now reminded of it, he speaks of it as an insignificant episode of the past.

Now, six months after the initial manifestations of the senile climacteric, he is passing out of this period into the somatic state of senility and the mental state of senile dementia. His appearance bears out the statement of his friends that he has aged ten years in six months. His bearing is less erect and when not watched he falls into a slouching attitude. He has lost weight, his face is wrinkled, his expression is generally apathetic, occasionally anxious when he makes an effort to concentrate his mental faculties upon his condition. He is becoming careless about his person and surroundings except on Sundays when he goes visiting or expects visitors, he is more sluggish in his movements, there is an occasional tremulousness of the hands, his walk is slower and he makes shorter steps. The degenerative changes have been quite uniform.

During the climacteric there were maniacal outbursts, periods of depression and amentia, there were delusions, hallucinations, and phobias with lucid intervals. The mental aberrations gradually disappeared leaving a weakened mind, the true dementia. He is pliant, so that a child can lead him from his purpose. He is losing interest in the events of the day, in everything and everybody except himself. His infatuations are all but forgotten, and other recent events are but dim memories while he recalls events of his early life. The sexual recrudescence has subsided.

It is still possible to arouse persecutory delusion through frequent suggestion, but it is mild and quickly forgotten. His mental attitude is apathetic or depressed.

He has gone back to work where his age and his long association with his fellow-employees have secured for him concessions which virtually relieve him from all active duties. What he does now is routine work requiring little mental effort. He is susceptible to flattery and feels keenly criticism though formerly indifferent to both. When questions involving reason and judgment arise, he makes an evident effort to concentrate his thoughts and he still reasons rationally but slowly. Long continued effort causes mental confusion and brain fag. When speaking of himself his ideas are still exalted, holding an exaggerated opinion of his importance and of his work, but there are no delusions. From a strong, aggressive personality he has become a passive, pliant nonentity.

The senile climacteric being one of the physiologic critical periods it can not be prevented nor need anything be done if the mental and physical deteriorations proceed uniformly and no active or distressing manifestations appear. When such manifestations appear as they did in this case it is generally possible to relieve distressing symptoms. Psychic measures are sometimes of avail, more often drugs must be used. The psychic measures to be employed depend upon the temperament of the individual and the particular form of aberration present. In my case the mental condition sometimes improved under flattery, praise or concessions, at other times criticism, censure, even threats were necessary to restrain, quiet or arouse him. Delusions could be developed through suggestion, but could not be dispelled that way. They were usually forgotten.

The drug treatment consisted of amorphous (red) phosphorus in two-grain doses three times a day given continuously for two months, chloral hydrate, bromide of potassium, and incidental remedies for constipation.

The bromide of potassium was given for a week when the sexual stress appeared to be most urgent and the patient spent hours in front of the woman's house. During this time veronal was given as a hypnotic, at other times chloral was used. I fortunately secured the patient's confidence through producing appreciable effects, catharsis, sleep and relief from pain. It was not difficult afterwards to induce him to take medicine when he thought he did not need it and would not take it from anyone else.

He is continuing to take the phosphorus and takes the chloral and potassium bromide at night when agitated or "nervous" as he calls it. Libido and potentia have disappeared and such psychic measures as the musical play and burlesque produce sensuous but not sensual impressions. I have not employed aphrodisiac drugs as I fear that such forced erotic stimuli would cause a harmful reaction. (The amorphous phosphorus has apparently little or no influence as an aphrodisiac.)

In this as in other similar cases, I found that the most lasting mental stimulation without reaction was produced by appropriate recreations. The apathetic dement holding a fishing line is roused to action by the sudden tug at the other end of the line. A popular or an old familiar air, the musical play, the rythmic ballet, fireworks, single novelties, as an air ship or ocean liner, simple sports as tennis, croquet, billiards, etc., which produce no mental strain nor aural or visual confusion are beneficial. Confusing sights as a ball, a race with many contestants, a circus, confusing sounds as the jangle of city noises and recreations which involve mental effort as chess, scientific card games, problem plays, etc., cause rapid brain fag and hasten brain exhaustion.[4] While this question of recreations applies more partic-

[4] From chapter on Hygiene "Diseases of Old Age," P. Blakiston's Son & Co., Philadelphia, by Nascher.

ularly to the period immediately following the senile climacteric when the mind can still interpret sensory impressions it can be made to apply to the climacteric period. These measures are of little service, however, if there is a persistent cause for mental confusion as there was in this case.

CHAPTER XXIX

SEXUAL LIFE IN THE AGED

Sexuality, like other factors in the life of the aged, is modified. In some cases there is a gradual diminution in desire and power to the point of complete extinction. In other cases desire or power diminishes slowly while the other diminishes rapidly. Occasionally, the recognition of the failing power causes the mind to dwell upon it and a morbid desire is produced and during the senile climacteric there is often a recrudescence of desire and sometimes of power.

The occurrence of a male climacteric corresponding to the menopause in the female is now recognized although it does not produce such marked mental and physical disturbances. About the forty-fifth or fiftieth year the man finds that the libido and the potentia both are lessened and a more powerful stimulus is necessary to arouse them to activity. About this time, the erectile power is lessened, greater exertion is required to bring on the orgasm and this occurs later or may not occur at all, the amount of semen expelled is less, while the character of the semen is altered. It is darker in color, has a strong odor and contains fewer spermatozoa. The spermatozoa are apparently not altered and are capable of fructifying the ovum. Ordinarily, the desire and power diminish together and in old age both may be extinguished together. In the female, the desire rapidly wanes after the menopause and her sexual life thereafter is confined to the passive submission to the sexual congress, in which there is neither pleasure, desire nor response.

The following cases exhibit variations from the ordinary senile changes:

Case I.—Female, aged seventy-three, was always intensely erotic and soon after her first marriage at the age of nineteen she had a paramour. When her first husband died she married this paramour and besides had other lovers. Her second husband left her and she lived with various men, her last lover leaving her when she was sixty-five years old. She retained her erotic disposition and is still willing to submit to any man who will consort with her. She has been a persistent masturbator, the right labia minor being in consequence thick and flabby and hanging down like a fold while the membrane covering it is thick and coarse like the skin of the palm of the hand.

Case II.—Male, aged seventy-five, married a young woman after fifteen years of widowerhood. She left him a week later and he came for treatment for impotence. There was a morbid desire brought on by the humiliation of the knowledge of his physical inability to satisfy his wife. The penis was small and flaccid, scrotum shriveled and the testicles appeared to the touch like small, rough, irregular marbles. He had a varicocele and an enlarged prostate. For several years he had what he called nocturnal emissions, but the discharge proved to be prostatic secretion. He had such a discharge when attempting intercourse with his wife, but there was no erection. In this case spinal faradization, cold sounds and the administration of strychnine produced satisfactory erections, but there was no distinct orgasm and the discharge was prostatic, not seminal.

Case III.—Male, aged seventy, began to notice the waning sexual power at the age of fifty. He thought he

needed a change and he sought the association of young women. This was effective for a few years but before the age of sixty neither this nor drugs, sounds or electricity had any effect. The penis became shrunken and flabby and he resorted to masturbation. At the age of seventy he was a confirmed masturbator helping along the psychic stimulation by suggestive pictures. About this time he had lost all desire for normal intercourse and declined this when he had the opportunity.

Case IV.—The following case is reported as a typical case of recrudescence of sexual desire during the senile climacteric. An inmate of a soldier's home visited the city and spent the night at the home of a friend. During the night he went to the room of a girl of sixteen and attempted to assault her. She resisted and cried for help. When the family went to her room they found the old soldier naked, in a state of erotic exaltation, apparently unconscious of everything except the gratification of his desires. He shortly afterwards was sent to an asylum suffering from senile dementia.

Case V.—A case of persistent libido, male, age eighty-three, married his third wife at the age of seventy-two, a year after the death of his second wife. The third wife, a woman of fifty-four, complained that he insisted upon daily congress with her and if she refused he either ill-treated her or he brought another woman to the house. He still does this although intercourse is followed by a depressing reaction and he must remain in bed for an hour before he recovers. He has had no children with any of his wives.

Case VI.—A prominent merchant, now seventy-five, says he can have no successful sexual congress with his wife who is near his own age unless he thinks of her as she was in youth. If she speaks during intercourse the illusion is dispelled and all desire and power disappears.

Case VII.—The following case shows the influence of habit upon the sexual life in old age. A commercial traveler, now over seventy, has followed the same routine mode of life for nearly forty years. His work takes him out of the city for three weeks and in the city for one week. During this week he has sexual relations with his wife daily while during the three weeks he has neither desire nor power. His desire and power during the home week are as strong as in earlier life. The wife, who is now about sixty-five, declares that their sexual relations are in no way different from what they were formerly, that she still has orgasms and only the subsequent exhaustion gives them any indication that they are ageing sexually as well as physically.

Case VIII.—A case of satyriasis. A merchant, aged seventy-eight at the time of his death, was until his fiftieth year normal in his sexual life and relations. Then finding that the power was waning while the desire was as keen as ever he sought the association of young women. At first a mistress sufficed to arouse the desired power, later he had two girls. His desires increased and could not be satisfied with two girls and he maintained an establishment where he kept several girls. He spent most of his time at this establishment and would sometimes use them all in the course of the day. Sexual exhaustion finally ensued and when medical treatment was unavailable he brooded over his condition and senile dementia followed.

Case IX.—Secret perversions. A broker was supposed to have led an exemplary life up to the time of his death at the age of sixty-seven. He had been a widower for ten years and after the death of his wife he became a strict church-goer, a harsh disciplinarian, condemning the slightest infraction of the moral code, and he became associated with or interested in a number of agen-

cies for the promotion of purity among the sexes. After his death a trunk was found filled with obscene literature, pictures and also letters from perverts of both sexes mentioning orgies in which he had taken part. Letters indicated that these orgies began soon after his wife died, occurred most frequently when he was supposed to be on his vacation or on business trips, but were also carried on during business hours with certain customers with whom he was believed to have personal business relations. All of these perverts were middle aged and old men and women and most of them belonged to a fashionable stratum of society.

Case X.—A woman, aged seventy, was operated upon for a tumor of the uterus and as a result cicatricial tissue formed in the vagina. No thought was given to this by the surgeon until the husband, aged seventy-two, consulted him and made a complaint because he was not able to have satisfactory intercourse with his wife. The surgeon was much surprised because he did not realize that a couple at that age could enjoy sexual life. Inquiry elicited that they were in the habit of performing coitus twice a week previous to the operation and when they found that their pleasure was prevented both regretted that the operation had been performed.

It should be remembered, however, that unusual sexual power in the aged may be the first symptom of senile dementia. Whenever a man past sixty is telling about his unusual power this disease should be suspected.

CHAPTER XXX

RADIUM THERAPY FOR SENILE EPITHELIOMA

CASE I.—A man, aged seventy, consulted me for a basal-cell carcinoma of the nodular type on the left temple. It had been developing rapidly for the past two months, being quite painful at night, disturbing his sleep. The surrounding tissues were infiltrated and indurated.

I applied a plaque containing 10 mg. of radium element. The applicator was screened with 0.8 mm. brass and covered with rubber tissue. He was given a two-hour treatment every third day until three treatments were given.

At the end of three weeks a sharp reaction occurred, the inflammation around the growth had inreased and the patient was alarmed because it looked much worse than at first. In another month the reaction had subsided and a crust had formed on the carcinoma. In time this crust separated from the growth, leaving a small ulcerated surface on which I again applied the applicator for one-half hour, this time screened with 1.2 mm. of brass. In a few days the ulcer had completely healed, the surrounding inflammation had disappeared, leaving a smooth and scarcely perceptible scar.

It is now several months since the carcinoma was treated and there is no sign of its return. Considering the rapidity of its development, without treatment, it would undoubtedly by this time have affected quite a large area on the face.

CASE II.—A man, aged seventy-five, had a small, flat basal-cell carcinoma on the upper part of the left ear.

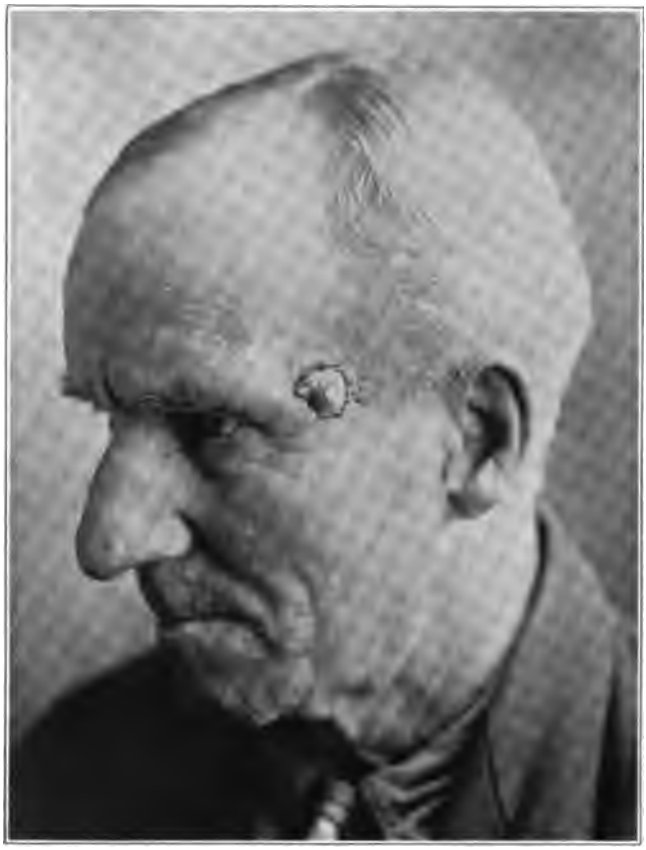

Fig. 12. Patient described in Case I. Basal-cell carcinoma of left temple, of two months' duration.

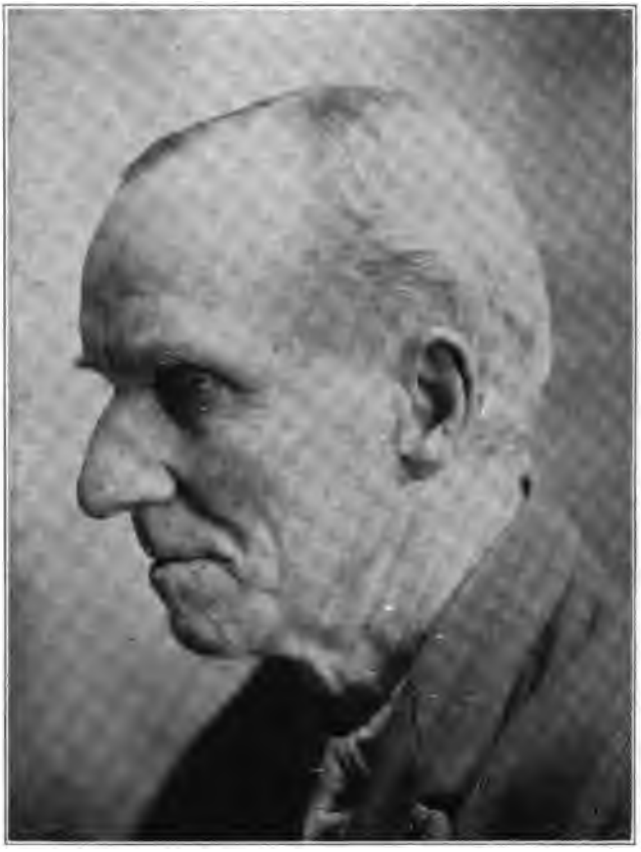

Fig. 13. Same patient as Fig. 12, after six and one-half hour's treatment with 10 mg. of radium element screened with 0.8 mm. of brass; no recurrence to date.

There was a crusting and a slight oozing from its surface which led to the diagnosis of epithelioma.

A flat applicator containing 10 mg. of radium element was applied for twenty minutes and repeated in ten days.

There was a crust formation which disappeared at the end of five weeks, leaving a perfectly healed surface. It is now almost impossible to detect where the epithelioma originally existed.

CASE III.—A man, aged seventy-two, consulted me for a sore on the forehead which was a morphea-like basal-cell carcinoma.

An application with a plaque containing 10 mg. of radium element was made every other day for one-half hour each time for three treatments. At the end of a month the growth had entirely disappeared, leaving a flat surface in place of the previous elevations formed by the carcinoma.

CASE IV.—A man, aged sixty-nine, had a large, ulcerating basal-cell carcinoma of the right cheek. It caused him great pain and his physician could not relieve it in any way and as the patient refused to use morphine, the doctor was at a loss to know the next step to take as the carcinoma was inoperable.

An application of radium was made and a treatment given twice a week for several weeks.

After two applications of radium there was no pain and the old man was able to sleep at night and work during the day. However, it has not improved the condition in any other way. Nevertheless, in a very large basal-cell carcinoma an improvement could not be expected, but the fact that the pain had disappeared is a great triumph in this individual case.

These cases represent the common types of epitheliomata seen in the aged. The natural process of degen-

eration, together with the narrowed lumen of the sclerosed arteries causing a poor blood-supply to the surface of the skin predisposes to the development of epithelioma, especially if there was a slight injury.

New growth in the aged requires different treatment from that employed in the treatment of younger persons. The usual treatments selected for younger individuals will usually do mischief to the senile case. In the aged a great many of these so-called rodent ulcers are compatible with good health for a long time and occasionally the patient will live longer and in less discomfort if the carcinoma is left untreated. This statement must be modified, however, for since employing radium in these cases I find that I do not get the untoward effects that I formerly experienced with other methods.

The basal-celled variety is the best type for radium-therapy. In most of these cases operation is unjustifiable because of the difficult situation to operate and the mutilation necessary. Moreover, usually this type of carcinoma does not metastasize, but if treated improperly it will quickly spread to the surrounding tissues.

Technic of Application

For the treatments over twenty minutes the radium is screened with 1 mm. brass and covered with rubber tissue. For short treatments it is not necessary to screen it. While it is permissible to treat the condition every other day for three treatments, in many senile cases it is advisable to wait two weeks after the first treatment in order to gauge the individual reaction.

Senile patients respond quickly to radium treatment, but on the other hand the effect is cumulative and if care is not exercised a severe burn will result several weeks after the application, due to the peculiar action of the gamma rays.

In many senile cases it is advisable to use the alpha, beta and gamma rays of radium, therefore in its application the plaque is covered only with rubber tissue. These treatments should not be given over twenty minutes at a time. When the effect of the alpha and beta rays are desired it is accomplished by not screening the applicator.

Prognosis

Although my experience has been very limited I am of the opinion that the older the patient the better the results with radium in the basal-cell variety of carcinoma.

A great many of these senile patients respond quickly to treatment and sometimes the growth does not recur at all; at other times they recur but will often yield again to radium therapy if promptly applied. In time, no doubt, in many cases the growth will reappear.

Does radium cure these senile cases? Does not the epithelioma recur with renewed force and in time prove to be worse than at first? Are not many of the improvements in the general health due to the encouragement the old man gets from being treated?

It was discussed by some at the last meeting of the American Radium Society that if a cancer does not recur five years after treatment it may be considered cured.

No doubt in some cases the cancer grows faster when it recurs, but in the majority of cases it does not, especially if radium is again used.

There is no question that with radium therapy the general health usually improves. On the contrary, with many other treatments the patient will lose weight and not feel as well generally.

It seems to me, although I may be wrong, that with the improvement in the local condition with the use of radium there is usually an improvement in the general con-

dition also. No doubt some of the improvement is comparable to the old soldier who braces up on Decoration Day while passing the flag, but the next day goes about with his usual stoop. Attention to his condition gives him encouragement.

Does Radium Cure Senile Carcinoma?

In some cases it does cure carcinoma. I do not feel that it is necessary for radium to cure cancer to be of value. It is a selective remedy and we must learn its field of usefulness and application. We could not expect quinine to help typhoid fever nor the remedies employed in typhoid to modify the course of malaria.

If we select the cases for application and do not take the cases that are not only inoperable, but hopeless in every other way, we surely will see the great value of radium.

The patient described in Case IV obtained relief from the pain after everything else had failed. Even though it did not improve the local condition the relief from the great suffering was well worth its trial.

If radium will relieve the pain and improve the discharge attending ulcerating types of epithelioma; if it will add in any way to the comfort of the last few months of hopeless cases; if it will remove a rodent ulcer only for a year; if it does a very little to relieve this horrible affliction, it has served a very useful purpose. If the cases are selected and applications properly made we have a remedy that is one of the best additions to our armamentarium.

CHAPTER XXXI

SURGERY OF THE AGED

Surgical procedures in senile cases present many peculiarities that make the work more difficult and the prognosis graver than in earlier life. These peculiarities include constitutional changes (greater resistance to infection, when the individual is in fairly good condition and greatly lowered resistance when the body is debilitated, more profound surgical shock, slower reaction from shock, slow and incomplete repair, deleterious after effects, etc.), and local changes (degenerations, atrophy, larger proportion of inorganic salts in bone making, bone more brittle, lessening its power of repair, cardiac and respiratory degeneration, increasing the danger from anesthesia, etc.).

Bearing in mind these factors which increase the difficulties of operation the surgeon is confronted by such questions as these: Is immediate operation necessary to save life? Will delay convert an operative condition into a nonoperative one? Is the condition one which is becoming rapidly worse so that a later operation under less favorable conditions will be inevitable? does the benefit to be derived warrant the dangers attending operative procedure? Will nonsurgical measures afford temporary relief without increasing the dangers of operation later; do cosmetic or nonessential reasons for the operation warrant the dangers? After an operation is decided upon the method of procedure must be determined and here again there are vital questions which must be carefully considered. Can the patient stand prolonged anesthesia? Is a radical operation imperative

or will a minor operation afford prolonged relief? Shall it be a one-stage or a two- or three-stage operation? Where there are several methods of procedure, which presents the least difficulties, the best clinical results and the best prognosis?

In many cases where operation is advisable, but not imperative the decision will depend upon the presence or absence of pathologic conditions that occur frequently in the aged such as diabetes, nephritis, cardiac or pulmonary disease, cerebral or nervous conditions and extreme debility. There can be no question when noninterference will result in speedy death, but even in such cases measures should be taken to minimize the dangers from accompanying complications. Diabetes for example is especially liable to coma, shock and infection. The danger from infection can generally be guarded against by strict aseptic precautions at the operation and afterwards. The danger from shock can be minimized by the use hypodermically of morphine and atropine immediately before operation and whiskey and strychnine immediately afterwards. The anoci-association method of anesthesia minimizes surgical shock and should be used whenever possible. The great danger in operations upon diabetes is the development of coma and this is especially liable to happen if ether is the anesthetic. The coma is believed to be due to rapid acidosis and this can often be prevented by placing the patient upon alkaline treatment for a few days before operation, but in emergency cases in which delay would be fatal, the work should be done under local anesthesia, or nitrous oxide-oxygen anesthesia.

As a general anesthetic in senile cases ether is safer than chloroform, but it must be used cautiously in cases where there is diabetes, nephritis, atheroma or pulmonary disease. Chloroform is a cerebral, cardiac and respiratory depressant and it must therefore be avoided

or employed cautiously where such depressant effects may be dangerous. The nitrous oxide-oxygen combination is a safe anesthetic in most senile cases. The A. C. E. mixture (alcohol 1 part, chloroform 2 parts, ether 3 parts) is occasionally used in senile cases, but possesses no advantages over chloroform or ether used alone. Local anesthesia is attended by little danger, but it is not applicable to major operations except when used by the Crile method of anoci-association. Ethyl chloride is of service only when the operation does not involve the deeper tissues; in one case the frozen area became gangrenous. Spinal anesthesia owing to its uncertain action, difficult technic and danger of innervation of the muscles of respiration should not be employed. The principal operative dangers are shock, hemorrhage and infection. The danger from hemorrhage is slight if the ordinary precautions are taken. Occasionally, a serous effusion about the site of the operation due to the degeneration of the vessels, may be observed. This effusion is slowly reabsorbed.

The aged possess a strong immunity to infection and under the usual aseptic precautions, infection will occur only if resistance is lowered through debility or disease. Septic infection in the aged is always a grave condition, but erysipelas about a surface lesion can usually be controlled without much difficulty. The great danger in surgical operations upon the aged is shock. Death from shock usually occurs during or immediately after the operation. In some cases there is apparent recovery for a few days when sudden collapse occurs. In a few cases there is mental and physical depression after operation and a slow progressive deterioration ending in death weeks later. In guarding against shock the care of the mental state is as important as the care of the physical condition of the patient. The dread of an unfavorable outcome is depressing and the patient going to an opera-

tion in a state of dread is more liable to succumb to shock than the hopeful patient. Nascher has pointed out the depressing effect of the hospital ward where the patient is obliged to hear the groans and cries of patients and see the dead carried out of the ward. It is impossible to instill hope in such surroundings. Sad leave-taking by members of the family, the suggestion that the patient make his will, stories of other cases that turned out unfavorably, a doubtful attitude of the surgeon, a lengthy discussion of the case in the presence of the patient, all tend to instill fear of the outcome. "Hope is the most powerful psychic stimulant known."

The improvement of the general condition depends naturally upon the existing physical condition. The robust, well-fed prostatic needs no building up before going to the operating table, while the emaciated, debilitated cancer patient should undergo intensive treatment to improve the physical condition. In the latter case forced feeding, with predigested or partly digested food if necessary, phosphorus and arsenic as tonics, and mild alcoholic stimulation should be employed. If the patient is nervous about the operation small doses of morphine should be given for a day or two before the operation. The danger of morphine medication is its liability to produce respiratory paralysis and this is obviated by adding small doses of atropia. A dose of atropia, say 1/150 grain, should always be given before chloroform or either anesthesia if there is senile emphysema or myofibrosis or if morphine has been administered shortly before. It should not be necessary to caution the surgeon about the state of the stomach, bowels and bladder, yet cases have occurred in which patients were almost asphyxiated or in which a deglution pneumonia occurred from vomiting the contents of the stomach during anesthesia when a heavy meal had been taken shortly before the operation. During deep narcosis there is relaxation of the sphincters

and if the bowels and bladder have not been emptied, they will empty themselves.

Various measures have been recommended to prevent shock during the operation or counteract it when it occurs. In the aged shock is sometimes so great that sudden death occurs during the operation. When sudden death does happen it is not possible to say that it was due to shock or to cerebral, respiratory or cardiac paralysis brought on by the anesthetic. Occasionally, there will be signs of threatened collapse as cold sweat on the forehead, ashy pallor, shallow respiration and a weak, slow pulse. Any one of these should serve as a warning. Cardiac, respiratory and cerebral paralysis usually give no premonitory signs and the first sign of their occurrence is the sudden cessation of respiration or of the pulse or else a convulsive stiffening of the body followed by complete relaxation in death. The convulsive seizure points to cerebral paralysis and the immediate paralysis of other vital centers. The cautious surgeon and anesthetist have at hand means and measures to overcome shock and threatened paralysis of the vital centers but there is no known method of preventing cerebral paralysis. When this occurs death follows in a few seconds.

The postoperative dangers can usually be met successfully but postoperative shock or collapse following hours or days after the operation, perhaps after a period of apparent convalescence, may occur in spite of every precaution. Just what this collapse is due to, is unknown. In one senile case sudden death occurred on the twelfth day after an emergency operation for strangulated hernia. The patient was making favorable progress, and the day before death he was permitted to sit up in bed. He was found dead a few minutes after he had gone to sleep. In a case of cancer of the rectum the patient rallied after the operation but the next day be-

came weaker and two days later he died. A few hours before, he appeared brighter and more cheerful than at any time since the operation, made plans for the future and seemed to be on the road to recovery. The collapse occurred while he was talking to the nurse. Apparent improvement followed by collapse is not unusual in senile cases which rallied after grave operations.

Secondary hemorrhage rarely occurs in senile cases, and under modern aseptic precautions infection is also rare. Uremia is another of the postoperative dangers which can be neither foreseen, prevented nor cured. It usually sets in with a persistent serous diarrhea but some cases give no premonitory symptoms before the final convulsions or coma preceding death. The urine is diminished and shows a diminution in the amount of urea excreted. Diuretics may increase the amount of urine, but they will not increase the total amount of urea and there is no known method by which the output of urea can be increased. A slowly progressive uremia generally ends in coma and a rapidly progressive uremia ends in convulsions. Large doses of bromides given as soon as the first slight twitchings appear may prevent the more active convulsions but will not prevent the final outcome. Chloroform inhalations have been employed to relieve the severe convulsions, possibly hastening death. Postoperative pneumonia, usually a bronchopneumonia, is especially liable to occur if there is a pulmonary disease complicating the surgical condition, and ether was used as the anesthetic. It may be due to the intense irritation produced by the anesthetic, but most cases are probably due to emboli causing infarction. Like uremia it can be neither foreseen nor prevented, and death usually occurs in a few hours or days. There is no routine method of treatment, various measures having been employed in the few recorded recoveries. Hypostatic congestion is one of the few postoperative dangers

which can be foreseen and should be prevented. The necessity for frequently changing the position of the patient in bed is so well understood that hypostatic congestion seldom occurs.

The most frequent surgical condition requiring operation are prostatic disease and hernia in the male and cancer and gall stones in the female. Senile gangrene, calculus, intestinal obstruction, fractures and cataract also occur rather frequently in the aged. In addition to these conditions requiring major operations there are many minor pathologic conditions requiring surgical interference. Varicose veins, chronic ulcers, hemorrhoids and bed sores all claim the surgeon's attention. Traumatic conditions, except fractures, are infrequent in the aged, and appendicitis, perhaps the most frequent surgical condition in the young, is very rare in advanced life.

It is not possible to offer suggestions as to the advisable procedure where there are several measures, each having its advocates and its opponents. In prostatectomy, for example, there are some surgeons who adhere to the one-stage operation, some who prefer the two-stage operation, some who adhere to the perineal operation, some who use only the suprapubic method. Statistics are unreliable. The only safe rule is to let the surgeon carry out the method with which he is most familiar, avoiding experiments and guarding especially against shock and postoperative dangers. "Age is no bar to surgical operations." But age carries with it complicating factors which make operations more difficult and more dangerous than in earlier life. Not the age of the patient but these complications must be considered when deciding upon the advisability of an operation. In every case where paliative measures will give relief and promise little or no shortening of life such

measures should be employed in preference to grave major operations.

One of the most difficult things in the aged is to select the proper anesthetic, and if we possessed a satisfactory method, our mortality rate would be much less. I have used the nitrous-oxide-oxygen narcosis for the aged and have never seen any bad effects from its use, and have always felt if certain improvements could be made on the apparatus for administering it we could perform many major operations by its use.

Doctor F. A. Bardwell of Boston has devised an apparatus combining several methods for administering nitrous-oxide-oxygen in which he has eliminated the bulky stand, making the attachments on any straight back chair by means of a strap. His inhaler is unique in that it combines several methods for administering anesthetics. A Bennett bag is attached near the inhaler, instead of two or three feet from the cone. The oxygen tank is connected to the inhaler and not to the bag, so that he can administer it at once if necessary without mixing it with the nitrous-oxide. As there is no pressure on the Bennett bag from the flow of gas into it, it is possible for the patient to rebreathe into the bag without a loss of the gas, as occurs in the ordinary apparatus.

There is a frame within the inhaler which is covered by gauze and there is an opening in the top of the cone through which ether can be poured upon the gauze if necessary. By a telescopic arrangement the bag can be detached from the cone in order that the inhaler could be used for ether narcosis.

Doctor Bardwell has found that a small amount of ether, for example, a drachm or two, will give the desired amount of relaxation for the surgeon, and at any time, if there is rigidity of the muscles, this very small amount of ether will give a result satisfactory to the surgeon. In this way it is possible to operate upon strangulated her-

nia or in fact to perform almost any major operation. Doctor Bardwell is obtaining some excellent results with his method of administering nitrous-oxide-oxygen anesthesia and it apparently overcomes certain obstacles, which makes it an ideal anesthetic for the aged, one which is safe in almost every instance.

Novacain with suprarenin is a safe and satisfactory local anesthetic for the aged, and is employed in a weak solution, but a large amount is required. It may be used for strangulated hernia or operations upon the testicle, and may be used in combination with the nitrous-oxide-oxygen narcosis, thereby preventing surgical shock. In a woman, aged eighty-two, who had an extensive burn on the arm, I applied a solution of novacain to the raw surface before applying the dressing, which made the latter painless. When novacain is combined with suprarenin the effect lasts about three hours. Alypin is a satisfactory local anesthetic in some cases, in fact some surgeons have performed suprapubic cystotomy with its use. Many surgeons employ alypin applied to the urethra before performing cystoscopy.

Strangulation of a hernia is very common in the aged, and may be operated upon with nitrous-oxide-oxygen anesthesia with a very little ether, or under the influence of a local anesthetic. Cocaine is a dangerous local anesthetic in the aged and novacain should be used in its place. It is possible to resect the bowel with this method if it is necessary.

The removal of a carcinoma of the gastrointestinal tract in the aged is not often possible and if operated upon and an obstruction is found an abdominal "anus" becomes necessary. This is a horrible result and in most cases death would be preferable to it. In some cases of cancer of the stomach a gastroenterostomy has been performed with excellent results. I had a patient, aged seventy, who had a carcinoma of the stomach, with com-

plete obstruction. Gastroenterostomy was performed and the patient is now living in comfort, a year after the operation.

Roentgenology assists us a great deal in determining the condition and also what surgical procedures will be necessary. By this method many carcinomata will be discovered in their incipiency. Gastric and duodenal ulcers are not common in the aged and when they are present they may undergo carcinomatous degeneration. By means of the Roentgen ray it is possible to diagnose a pathologic gall bladder with or without stones, and also the presence of renal stones. If there are gall stones which are causing symptoms, cholecystotomy may be the best procedure. Many cases of gall stones will be confused with cancer of the liver, and a diaguosis will be difficult. Courvoisier's law is of much help in diagnosis: deep jaundice associated with palpable enlargement of the gall bladder means carcinoma; without distention of the gall bladder it usually means stone.

Adenoma or carcinoma of the prostate may cause complete obstruction, and immediate operation becomes necessary. Even in some cases of this kind a large metal catheter if held for sometime, especially with nitrous-oxide-oxygen-ether narcosis to the point of relaxation, may relieve the urinary obstruction. A large, flexible metal catheter will sometimes work successfully when other methods fail. If operation becomes a necessity, it is possible to perform it with nitrous oxide anesthesia, employing oxygen with it if there is cyanosis. A drachm or two of ether with it will give the desired amount of relaxation. Suprapubic cystotomy may be performed under local anesthesia if other methods are contraindicated.

From my chapter on Senile Gangrene it may be inferred that it is not always necessary to make haste in amputation for senile gangrene. In many instances expectant treatment is justified, free drainage may be made

and a wet dressing applied. In many cases of gangrene of the toes if we wait several weeks before operating upon the patient the result will be better. While the disease is in the active stage operation often hastens death. One thing is certain, it is a very fatal condition and we are justified in taking a chance in waiting to see how far nature will go in taking care of the patient. It is surprising what nature will do in many cases; the great trouble is, we are too ambitious and do not give her a chance. My case of senile gangrene is undoubtedly an exception, but the patient made an excellent recovery without surgery. It is advisable in our expectant treatment, however, to be prepared at any moment for amputation if the occasion demands it. If the patient is a diabetic the outcome is usually fatal and we are justified in waiting until the active period has subsided before operating. If the nitrous-oxide-oxygen narcosis is employed the result may be encouraging. If the cellulitis is extending, operation should be performed as quickly as possible.

In some cases carbuncles will be cured without surgical procedures by making multiple injections of an antiseptic solution containing phenolic ethers and by using a combined vaccine subcutaneously. Free incision is advisable, however, and a cross-incision covering the entire diameter of the carbuncle should be made.

I had an aged lady, seventy-five, who fell and had a fracture of the neck of the femur as a result. This was not corrected and no treatment by means of extension apparatus was given. At the end of two months she was in a chair, and after a few weeks in the chair she was able to take a few steps with the aid of crutches. The result of the fracture was not good, but she is able to get around a little. On the other hand, I had a lady, aged seventy-four, who had a fracture of the neck of the femur. I gave more attention to the fracture than to her general

condition. She was tortured with painful extension ap paratus with weight, and the pain caused by the treatment required the use of opiates for relief. She died at the end of the second week.

These experiments led me to believe that in many cases where we try for an excellent result with the fracture, the patient dies, while if the fracture is not treated vigorously, and all the attention is concentrated on the general health, we may get an excellent result physically and a bad result with the fracture. Open operation would hardly be advisable in the aged, and immobilizing with plaster does not yield encouraging results. If the patient is of unusual physique, it may be possible to perform open operation (either nailing or bone drilling) but in most cases we must be content to keep the patient in as good physical condition and be contented with getting the patient about the best we can. More attention should be given to the general health than to anything else, and the patient should have massage and should be moved as much as possible in bed. It becomes necessary in time to force the patient out of bed, and in most cases it is very painful at first. Later it becomes easier to get into a chair and the patient can move a little without the extreme pain experienced at first.

Senile epitheliomata are frequently operated upon and the results in many cases are very encouraging. A great many of these so-called "rodent ulcers" are in the temporal region and are inoperable. Again, the operation is oftentimes very mutilating. In my experience, radium therapy has succeeded in the healing of senile epitheliomata to the extent of not making operation necessary in most cases. In many cases the patient fails rapidly and the epithelioma spreads after a surgical procedure of this kind. Cancer of the tongue and larynx will yield to radium therapy better than from surgical procedure in most cases. Although radium does not act as well on

mucous surfaces as on the skin, the results in the mouth and throat are encouraging provided large doses are employed.

Doctor Joseph Bissell (*The International Journal of Surgery,* May, 1914) reports the case of a professional man who had a rapidly growing epithelioma of the larynx. The malignant growth returned after each operation and his general condition became much worse and he was sent back to his home in a distant city to die. About ten or eleven months afterward he returned to New York, stout, ruddy and a healthy looking individual. He said that he was going back to resume his business, having been cured by localized radium applications. He had employed large doses, first using a tube containing fifty milligrams of radium element placed in his larynx for two hours, and he also had block applications of large dosage of radium applied to the outside of his throat. At one time as much as 961 milligrams had been used on him for twenty hours. This case was an apparent cure of cancer by the local use of radium.

Of great importance, a fact recognized by Doctor Robert T. Morris, is that we can not keep senile cases in bed after surgical operations. In some cases it is advisable to get the aged patient out of bed the next day after the operation, no matter if it was a major operation. Appendicitis is very rare in the aged, but when present we should have the senile patient in a chair the next day. This rule applies to almost every operation upon the aged. Senile patients will not do well in bed, and often a patient who is failing rapidly will improve almost immediately when he is allowed to get into a chair. The psychologic effect of allowing them to get out of bed is excellent, and they believe they will rocover. If we tell them they will get better, they will not believe us, but if we show we mean it by allowing them out of bed and also planning things for them to do when they recover they are assured

of our good faith in telling them that they will recover.

It may not seem logical to allow them to get out of bed the next day after an operation, but in treating the aged we must make allowances that we would not make in younger individuals. All senile patients fail rapidly while in bed, so I have made a keynote in geriatrics to "Keep Senile Cases out of Bed."

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